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OFFICIAL ORGAN OF THE NORTHWEST FRUIT GROWERS ASSOCIATION

VOLUME THREE NUMBER THREE DOLLAR A YEAR

BETTER FRUIT

September 1908—Packing Number

M. O. LOWNSDALE'S FAMOUS PACK OF APPLES

PUBLISHED BY BETTER FRUIT PUBLISHING COMPANY, HOOD RIVER, OREGON

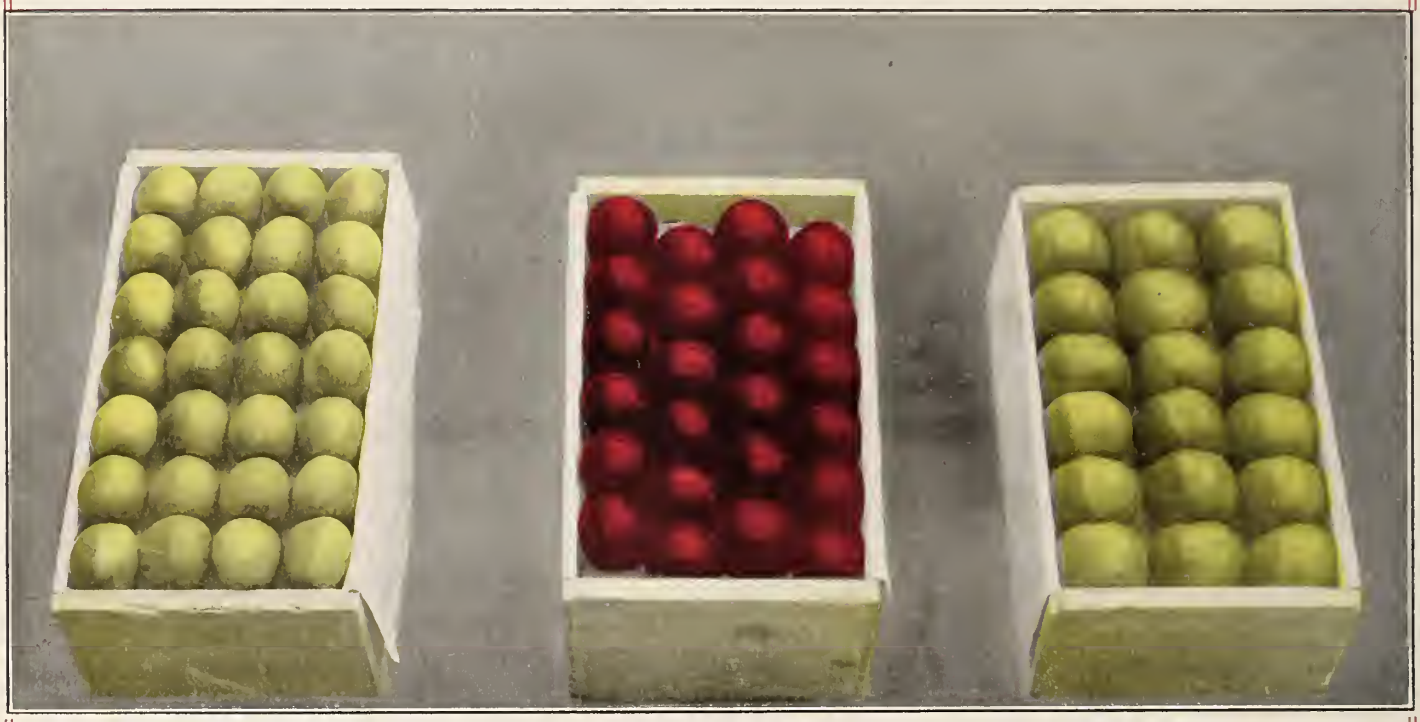
Hood River Apples

Best on Earth and Famous the World Over for

QUALITY ∴ QUALITY ∴ QUALITY

OUR "FANCY" PACK THIS YEAR GRADED TO PERFECT APPLES ONLY

Hood River Apples for beautiful color, excellency of flavor and long keeping quality, unequalled. Hood River Spitzenbergs and Newtowns are in a class by themselves. Hood River Jonathans, Arkansas Black, Ortley, King, Winesaps, Red Cheek Pippins, Baldwins, Mb. Twigs, Ben Davis are top notchers



OUR PACK

Every apple a perfect apple. Every box a perfect pack. Sizes uniform, a work of art. We control ninety per cent of the entire output of Hood River Valley—a splendid crop of the finest apples ever grown

We Want Your Orders *You Want Our Apples*

Correspondence solicited and estimates furnished of the number of boxes for sale of each variety

Hood River Apple Growers Union

Hood River, Oregon

The Country's Call—Back to the Soil!

THE BEST PLACE TO BUY FRUIT LAND

is where production is perfect and crop prices highest. That is in

Hood River Valley

OREGON'S FAMOUS APPLE DISTRICT

Where Orchards Net From $300 to $1000 Per Acre

Visit Hood River now before October harvest! The fruit-ladened trees will tell you the truth about our phenomenal production and prosperity! Hood River can back up any statement about production with the goods, so come and investigate personally.

This Month's Offer

Twenty acres absolutely perfect fruit land six miles from town on main county road. One-half mile from school, store, grange hall and church. Three acres in wooded pasture, balance in cultivation. Two acres bearing orchard; four hundred Spitzenberg trees in fourth year; four hundred and fifty Spitz, Newtowns and Arkansas Blacks set last Spring; two acres more ready to plant. Irrigation ditch on place; good cottage. This is strictly an A 1 property and will be worth a fancy figure when all in bearing. We offer to take entire charge of this orchard and cultivate it for five years, turning over a fine bearing orchard for its present worth—$10,000. Terms $6000 cash; time on balance.

We also offer same proposition on ten acres yearling trees in same locality at $4800, giving bond in both cases for faithful performance of contract to cultivate satisfactorily. Consult our bank references

Hood River Fruit Lands net five to ten times as much as city investments, and life here is worth living. The scenic features of this Valley rival Switzerland.

Climate, soil, location and production excel any district in America. Land for everyone at right prices. Consult us.

We Sell

Fruit Lands, Orchards, Homes

Write us for literature and general information. We are glad to be of service to prospective citizens

MacRae & Angus

432 Chamber of Commerce, Portland, Oregon

Reference: Butler Banking Co. and First National Bank, Hood River. Cashier Schmeer, United States National Bank, Portland

MOSIER

Also called East Hood River

FRUIT LANDS

In large or small tracts. Some very good land at low prices at present. Good growing community. Six miles east of Hood River. Parties wishing to buy will do well to write or see

GEO. CHAMBERLAIN
MOSIER, OREGON

THE COMING FRUIT REGION

From the White Salmon to the Klickitat, opposite to Hood River, Washington Side of the Columbia

Elevation is right, soil is the deepest and best, climate perfect, market situation ideal by the great North Bank road and the Columbia. Lyle is the coming fruit belt. Watch this region for the next two years. Prices the very lowest. Get in for the certain raise. $1000 invested now will bring larger returns than any other investment you can make in fruit lands. I have large or small tracts, some exceedingly desirable. Come and see me, or write and tell me what you want.

GEO. A. SNIDER, Lyle, Wash.

North Yakima

Principal City in the Yakima Valley

Centrally located in one of the finest fruit regions of the State. Excellent home town. Headquarters for sale of bearing orchards and thirty thousand acres orchard land under new government canal. *For information address*

COMMERCIAL CLUB
NORTH YAKIMA, WASHINGTON

ROGUE RIVER VALLEY

Famous for its APPLES, PEARS, PEACHES, GRAPES, MELONS AND CLIMATE

THE natural home of the Spitzenberg and Newtown apples. Rogue River pears have led the United States for past five years in the highest price in the New York market. No peaches of the South excel those of Rogue River, and trees are healthy. Grapes perfection in color and flavor and the best of shippers, and growers have more orders than they can fill. Rogue River cantaloupes, watermelons and cassabas, none better and big money makers. The Rogue River Fruit Growers' Union gets the highest price for fruit, and the Southern Pacific gives terminal rates on shipments East. Climate the perfect medium between arid California and webfoot Oregon. No storms or winds to injure fruit crop. Almonds and figs ripen perfectly and palms grow in the yards. Land yet cheap, but will double in two years. American community and good schools, rural mails, telephones, etc. Full information by addressing CHARLES MESERVE, Medford, Oregon, Seller of *Real Estate in All Parts of Rogue River Valley.* References by permission: Rogue River Fruit Growers' Union, First National Bank of Medford.

Apples Pears Plums Peaches Prunes Cherries Berries

JONATHANS

THE LAND OF OPPORTUNITY

Located across the Columbia River from Hood River, Oregon, the White Salmon Valley offers the greatest opportunities of any land on earth to fruit growers. Where apples, cherries, pears, peaches, prunes and strawberries grow to perfection. A few dollars invested in fruit land today will return to you in a very few years sixty-fold. The soil, climate, water and scenery are unsurpassed by that of any country. Build a home where you can enjoy peace and plenty the remainder of your life. Fruit lands cleared, planted and cared for until in a bearing condition. Write us for descriptive matter and prices.

ESTES REALTY & INVESTMENT CO.
WHITE SALMON, WASHINGTON

NEWTOWNS

Spitzenbergs Winesaps Strawberries Nuts

Orchard Lands, Stock Ranches, Dairy Farms and City Homes

We have some choice large tracts of land in Southern Oregon admirably adapted for orchards. One tract of a little over 1,000 acres at $75 per acre. A SNAP. Must sell quick. We also have some large stock ranches with big back ranges adjacent, and some magnificent irrigated dairy farms. We buy and sell, and sell right. Correspondence or a visit solicited.

Grant, Burdic & Staples Realty Co.
Hotel Oregon ASHLAND, OREGON

Walnut and Fruit Land

ALL WELL WATERED *RIVER VIEW*

Some of the very best nut and fruit lands to be had at reasonable rates. Living springs of ice cold water. Miles of River View. Come or write for information

W. D. MOREHOUSE, UNDERWOOD, WASHINGTON

YAKIMA VALLEY WASHINGTON

We sell improved and unimproved fruit land, also land under the government Tieton reclamation project. Write for booklet.

YAKIMA REAL ESTATE CO.
Box A186
NORTH YAKIMA, WASHINGTON

THE ROGUE RIVER VALLEY

THE CREAM OF CREATION

Has again demonstrated by the great crop of fruit now set for 1907 that this is the surest in its crop production of any part of America. This fact makes this district look good to the trained horticulturists of all other sections of the Northwest. When it is conceded that orchards approaching the bearing period here are held at less than one-half the figures demanded for similar lands in other districts yielding less net profits than here, it should impress the readers of "Better Fruit" that now is the time to invest in this favored valley, with its regular crops and famous good climate. The homeseeker will get the benefit of more than twenty years' experience in the fruit business by dealing with the

ROGUE RIVER LAND COMPANY
EXHIBIT BUILDING MEDFORD, OREGON

Stephens & Hause

FRUIT LAND

IN SMALL AND LARGE TRACTS

near Goldendale, Washington, in one of the best newly developed fruit belts on the Pacific Coast. We also have some choice wheat farms, meadow land and stock ranches for sale. *For information and description write*

STEPHENS & HAUSE
Goldendale, Klickitat County, Washington

THE HOOD RIVER LAND EMPORIUM

HOOD RIVER, OREGON

POSSESSES

CLIMATE—A desirable medium between the drier eastern and the more moist western conditions of the Northwest.

SOIL—Volcanic ash, rich in phosphates, and recognized as the best in the world for apples and strawberries.

Makes a specialty of real estate, conveyancing, loans and surveying. The president, John Leland Henderson, is a practicing lawyer residing in Hood River, and has been identified with the Hood River Valley for thirty years.

BURBANK & AMOS

REAL ESTATE

Irrigated Fruit Lands in the Famous Vale of Cashmere
The Garden Spot of Washington

CASHMERE, WASHINGTON

SOUTHERN OREGON FRUIT LAND

Two hundred acres second bench, partly cut over timber land, deep red soil, lays well, on best road in county; seven miles from Grants Pass, quarter mile from school; adapted to the raising of apples, pears, peaches and grapes; R. F. D. and rural telephone. Sold in any amount from ten acres up. **$32.50 per acre.**

JOHN H. ROBINSON
Route 2, GRANTS PASS, OREGON

All Sunshine and Dollars

No mud nor snow. Three hundred and sixty-two feet altitude. Five hundred dollars monthly for life by owning a forty acre Kennewick-Finley fruit ranch. Write for 1908 price list of three thousand acres at seventy-five dollars. Concrete building and business for sale right

HANSON & RICH
OWNERS
KENNEWICK, WASHINGTON

Salem Tile Factory

GOLD MEDAL
Highest award on Tile at Lewis and Clark Fair

Tile From 3 to 12 Inch

Order carload lots or for further particulars write for booklet or call on or address

J. E. MURPHY
Fairgrounds Post Office, Oregon

LAND

OF BIG, RED APPLES

WE ALWAYS HAVE SOME
CHOICE TRACTS TO OFFER

At popular prices and sell them strictly on their merits. Years of study given to Hood River and its products. Can sell you intelligently. Call on or address

Geo. D. Culbertson & Co.
Leading Land Agents Hood River, Oregon

H. R. A.

HOOD
RIVER
APPLE LAND

H. R. ALBEE
HOOD RIVER, OREGON

Underwood *and* Little White Salmon

Choice Fruit Land for Sale

I have a number of choice places for sale, improved and unimproved. Some with good heavy timber, ranging in price from $18.00 to $100.00 per acre. I make a specialty of small tracts

F. W. DEHART
UNDERWOOD, WASHINGTON

Mosier Fruit Lands

Apples Without Irrigation

Seventy-two miles east of Portland, six miles east of Hood River; the eastern portion of the Hood River fruit district; 15,000 to 20,000 acres good fruit land, only 1,000 in cultivation. Prices, $20 to $1,000 per acre; produces $250 to $500 net annually when in full bearing. No irrigation, with the right kind of soil and climatic conditions, gives us apples that are unsurpassable.

IMPORTANT

Our apples grown without irrigation can be kept all winter and then shipped to any market in the world, and still be in good condition. This gives us a market that is never overstocked, regardless of how much is raised in irrigated countries. Splendid opportunities for investment. Call on or address

H. E. WAITE, Mosier, Oregon

CHERRY ORCHARDS

CLOSE TO SPOKANE, WASHINGTON

Will be more profitable, according to experienced fruit men, than the famous orange groves of California. The choicest varieties of cherries, apples and pears, the three most profitable fruits grown in the Northwest, reach perfection in the irrigated orchards of the Spokane country. We are handling irrigated fruit land within six miles of the center of town, with every city convenience. Five and ten-acre tracts. Prices are low and terms exceptionally easy. We plant any variety of fruit trees and take care of them one year free of charge if desired. We handle irrigated land exclusively, and only the best of that. Spokane is the biggest and most rapidly growing city in Eastern Washington and Idaho, and irrigated orchard land so close to the city will be immensely valuable. Write us for full information.

NEELY & YOUNG, INC. *Club Building, Spokane, Washington*

WANTED

Exclusive Agent

To sell choice fruit land in the famous Bitter Root Valley, the home of the McIntosh Red Apple. Prices, $100 to $150 per acre; easy terms. Sure to double in value within two years. Yields of $1,000 per acre from apples, pears, etc., are common. Absolutely free from all harmful pests and killing frosts. The Valley of Opportunity. The land of perfect fruit. Address

Bitter Root Valley Irrigation Co.
Hamilton, Montana

THE HOUSE THAT SAVES YOU MONEY

Ship your consignments to us. We make a specialty of fresh meats, poultry, eggs, butter, potatoes, apples and onions. We obtain the highest prices and mail returns immediately. Write us for shipping tags and information

Buchanan-Behrens Co.
COMMISSION MERCHANTS
Phone Main 8099
75 Front Street PORTLAND, OREGON

PORTLAND BROKERAGE CO.
Consignments solicited with quick returns
FRUITS, PRODUCE BUTTER AND EGGS
TELEPHONE A 5758
206 Stark St., Portland, Oregon
Between Front and First Streets

Levy & Spiegl
WHOLESALE
FRUITS & PRODUCE
Commission Merchants
SOLICIT YOUR CONSIGNMENTS
Top Prices and Prompt Returns
PORTLAND, OREGON

IF YOU WANT TO MARKET YOUR
FRUIT
RIGHT, ALWAYS SHIP TO
W. B. Glafke Co.
WHOLESALE FRUITS AND PRODUCE
108-110 Front Street
PORTLAND, OREGON

Capitol Commission Co.
HELENA, MONTANA
Largest distributors of fruits and vegetables in the city

We want berries, cherries, wax beans, new potatoes. We buy outright or handle on consignment. Get in touch with us

GOOD RETURNS PROMPT REMITTANCES

Rockford Fruit Growers' Association
Shippers of fruits grown without irrigation and therefore having the finest flavor and keeping qualities. We guarantee our pack and market nothing but first-class products in every particular. Write us now for future delivery. Address Rockford Fruit Growers' Association, Rockford, Washington.

Louis Barzee, Pres.; E. L. Cannon, Secy., Roseburg, H. N. Cobb, Manager, Roseburg
Douglas County Fruit Growers' Association
Packers and Shippers of Choice
Umpqua Valley Fruits
Head Office, Roseburg, Oregon

FAMOUS HOOD RIVER
Strawberries
THE FINEST BERRY ON EARTH AND THE BEST SHIPPER
LOOK GOOD, BUT TASTE BETTER
Fancy Pack Guaranteed
FRUIT GROWERS UNION
HOOD RIVER, OREGON

Richey & Gilbert Co.
H. M. GILBERT, *President and Manager*
GROWERS AND SHIPPERS OF
YAKIMA VALLEY FRUITS AND PRODUCE
Specialties: Apples, Peaches, Pears and Cantaloupes
TOPPENISH, WASHINGTON

Ryan & Newton Company
Wholesale Fruits & Produce
Spokane, Wash.
We have modern cold storage facilities essential for the handling of your products.
Reliable market reports
PROMPT CASH RETURNS

YAKIMA COUNTY HORTICULTURAL UNION
NORTH YAKIMA, WASH.
E. E. Samson, Manager
APPLES, PEARS, PRUNES, PLUMS, PEACHES, CHERRIES, APRICOTS, GRAPES AND CANTELOUPES
Mixed carloads start about July 20. Straight carloads in season. Our fruit is the very best grade, and pack guaranteed.
We Use Revised Economy Code

LINDSAY & CO. LTD.
Established 1883
Helena, Montana; Billings, Montana; Great Falls, Montana.
We were among the first handlers of Hood River strawberries and have handled them each year since strawberries were grown at Hood River. We handle all kinds of green fruit, and invite correspondence with shippers of first-class fruit only.

DAVENPORT BROS.
WHOLESALE
FRUIT & PRODUCE
Growers and Shippers of the Famous
Mosier Valley Fruits
Portland, Oregon

Pearson-Page Co
131-133 FRONT STREET
PORTLAND, OREGON

Superior facilities for handling
PEACHES
APPLES AND
PEARS

Solicit Your Consignments
Reliable Market Reports *Prompt Cash Returns*

Paid up Capital $75,000
THE
LAWRENCE-HENSLEY
FRUIT CO.
Successors to
THE LIEBHARDT FRUIT CO.
Jobbers of
Fruits and Vegetables
and Apple Packers
Denver, Colorado

Davenport-Thompson
Company
Commission Merchants
We are prepared to get the best prices for all consignments of Fruits, Vegetables, Potatoes, Etc., entrusted to us.
Phone Main 462
Phone Home A1462
144 FRONT STREET
PORTLAND, OREGON

McEwen &
Koskey
Wholesale Fruit & Produce and General Commission Merchants 129 Front Street, Portland, Oregon
Consignments
Are solicited, all your shipments receiving our personal attention

H. WOODS CO.
WHOLESALE FRUITS
and
COMMISSION
Apples, Peaches and Strawberries
127 South Water Street
CHICAGO, ILLINOIS

Mark Levy & Co.
COMMISSION
MERCHANTS
WHOLESALE FRUITS
121-123 FRONT AND
200 WASHINGTON ST.
PORTLAND, OREGON

THE OLD RELIABLE
BELL & CO.
Incorporated
WHOLESALE
FRUITS AND
PRODUCE
109-115 FRONT STREET
PORTLAND, OREGON

THE
DAVIDSON
FRUIT CO.
of
Hood River, Oregon
Pioneer fruit packers and shippers of this famous section. "Quality" is our watchword, and "Fruit Worth the Price" is our motto. Wire or write us for apples, strawberries or pears in season in car lots or smaller shipments. Other fruits in season in less quantities.

CORRESPONDENCE SOLICITED
RYAN &
NEWTON CO.
Wholesale Fruit and Produce
BUTTE, MONTANA
We have modern cold storage facilities essential for handling your products. A strong house that gives reliable market reports and prompt cash returns

W. H. Dryer W. W. Bollam
Dryer, Bollam & Co.
Successors to
DRYER, O'MALLEY & CO.
General
Commission
Merchants
128 FRONT STREET
PORTLAND, OREGON
TELEPHONE MAIN 2348

IT'S VERY PLAIN 2 2/4

1880
1907
If you appreciate this kind of a house, when you have fruit to ship, write to

A SIMPLE
PROPOSITION
Dealing with an old established house gives results

Page & Son
Wholesale Fruits
Portland, Oregon

E. P. LOOMIS & CO.

[New York City, New York]

Send Your Fancy Boxed Apples to Us

We will get you the top prices on this market. We can handle to the best advantage your Spitzenbergs, Newtown Pippins, Arkansas Blacks, Winesaps, Red Cheeks, Rome Beauties, Jonathans and Grimes Goldens. We have handled for the last ten years thousands of boxes of the cream of the above varieties grown in Oregon, Washington, Idaho and Colorado and have built up a large trade who are ready to pay fancy prices for fancy quality, so that our returns to our many shippers have been most satisfactory. We send account sales with check for net proceeds realized, as soon as each car is sold. This is the year to ship on consignment to an old established house who will get for you the full value of your shipments. *Boxed Apples are Our Specialty*

Mail will reach one of our firm at Hood River, Oregon, during September and October
We have large cold storage facilities on our own premises

E. P. Loomis & Co., [Established 1868] 95-97-99 Barclay Street, New York City, New York

Fruit Grower and Shipper

If You Want Good Results, Consign Your Shipments to

The Great Central Market—CHICAGO

Which is not only one of the largest consuming markets in the United States, but being the greatest railroad center in the world is, therefore, the most important diverting point for all Western and Northwestern shippers.

If you desire experienced and capable marketing agents to properly distribute and sell your fruit, either in Chicago or other markets, wherever best prices can be realized, write or wire us. Will always quote you conservatively.

N. G. Gibson, the head of this company, and W. C. Michael, our general Western representative, were two of the first fruit dealers to commence shipping and marketing Northwestern fruit in the Eastern markets. Our long experience and wide acquaintance with the buying trade all over the United States place us in an exceptionally strong position to secure you best results on what you have to market.

We make a specialty of selling f. o. b. entransit, or delivered, whichever way will bring highest net results to the shipper. We give all fruit that has to be sold at auction our personal attention. We also handle export shipments, our foreign representatives being the best and most reliable dealers in the principal foreign markets.

We refer you to The First National Bank, Chicago; Produce Reporter Company; their Weekly Credit Sheet of June 20th, 1908, and also E. H. Shepard, of the Better Fruit Publishing Company.

GIBSON FRUIT COMPANY

141 South Water Street, Corner Clark CHICAGO

Steinhardt & Kelly

101 Park Place, New York, N. Y.

The largest and most extensive fruit concern in the world operating in all the fruit growing sections of the civilized globe

Exclusive Purveyors of High Class Fruits

THE VERY FIRST CONCERN TO EXTENSIVELY INTRODUCE THE

OREGON APPLES

TO THE CONSUMERS OF THE EAST

Sole importers into the United States of fresh fruits, both outdoor and hot-house, from Asia, Africa, Europe, Australia

To Oregon, Idaho and Washington Fruit Men!

Chicago and New York are the two greatest consumers of your products in America.

The two combined will consume more high quality fruit than all the rest of the United States together, and draw better prices on the best grades than any other markets.

Each town has its advantages.

New York has made record prices on a few cars and is a valuable market at times. Its worst fault is that it goes to extremes. You may at times (not always by any means) get more there for one or two cars of something fine when the article is scarce, than in Chicago.

We have known, and have made ourselves, some splendid sales there, but when it comes to the average for the season Chicago is invariably ahead, especially in a year of heavy supply. Fair minded New York people admit this, and it is too well understood among the heavier shippers of the West for argument.

The Fruit Auction System in Chicago, which was for years unsatisfactory, is now on a high plane and is fast gaining the confidence it deserves and doing an immense business.

As to the dealers themselves, there are a number of good ones in Chicago, but it is generally conceded, we believe, that if there is any one house at the top our house is that one.

We demand, and get, a fair rate or commission, and will accept nothing less, but we will give you value received for this commission.

We solicit the accounts of heavy shippers of fruit for either Chicago or New York sale. (You notice we put Chicago first.) Will sell at auction or otherwise, as you direct. We believe our responsibility is unquestioned.

F. NEWHALL & SONS

131 South Water Street CHICAGO

EXTENSIVE IMPORTERS OF

FRENCH FRUIT TREE SEEDLINGS

Including Pear, Myrobolan Plum, Mazzard and Mahaleb Cherries, Quince, Manetti and Multiflora Rose Stocks.

AMERICAN GROWN APPLE SEEDLINGS

Apple and pear grafts, piece and whole root. Large general nursery stock. Prices promptly made.

The Shenandoah Nurseries

D. S. LAKE, Proprietor

Established 1870—600 Acres Shenandoah, Iowa

HOOD RIVER BIENNIAL APPLE FAIR

October 15, 16 and 17

Everybody invited. For particulars address SECRETARY HOOD RIVER BIENNIAL FAIR ASSOCIATION.

These Apples grew in the WHITE SALMON VALLEY

Opposite Hood River

Soil, climate & location especially adapted for high grade fruit & berries. *Sena* for our *Book* descriptive of this beautiful valley

A SPLENDID PROPERTY

No. 102—25 acres 4 miles east of White Salmon and 1¼ miles from a boat landing on the Columbia river. This tract has a gentle slope to the east, and every acre is first-class fruit land with a deep, rich red shot soil. 10 acres have been slashed and burned and is ready to clear. The balance is willow, hazel, vine maple and wild cherry brush land. The view from this tract up and down the Columbia is magnificent. The possibilities of this tract for a home and commercial orchard are hard to surpass, and the price is only $75 per acre. This is a splendid property at a bargain.

White Salmon Land Co.

J. C. MacINNES WHITE SALMON, WASH.

OREGON STATE FAIR AND EXPOSITION

THE FAIR THAT MAKES GOOD

SPLENDID RACING

SEPTEMBER 14 TO 19, 1908

All Departments First Class

AGRICULTURE	HORSES
HORTICULTURE	CATTLE
MECHANICAL	SHEEP
WOMAN'S WORK	SWINE
FINE ART WORKS	POULTRY

COMPETITION OPEN TO THE WORLD
EXPOSITION FULL OF INTEREST DAY & NIGHT

Greatest Fair on the Pacific Coast

BEAUTIFUL CAMPING GROUNDS. EXCELLENT MUSIC

W. F. MATLOCK, *President* F. A. WELCH, *Secretary*

Live facts in a lively way. Live facts for men and women. Facts that affect you—your family

Hood River Valley Apple Lands

Are paying from $400 to $700 an acre to their owners. Many started in a small way, today they are independent. *You can begin today*

He who investigates for himself becomes "The man who knows"

IT PAYS TO SEE US

W. J. BAKER & CO.

HOOD RIVER, OREGON

OR

CHAPIN & HERLOW

332 Chamber of Commerce PORTLAND, OREGON

SCENE ON THE STRAWBERRY FARM OF C. O. BARNES, ONE MILE FROM GOLDENDALE, WASHINGTON

Seven Hundred Crates to the Acre

of first class commercial berries from this field this season

KLICKITAT

will bear inspection, it will pay you to investigate. Call on or address

Secretary Klickitat Development League

GOLDENDALE, WASHINGTON

Hood River

OREGON

Greatest Apple Growing Valley in the World

HOOD RIVER'S FAMOUS PACK

Where fruit pays from $500 to $1500 per acre and is marketed for you at the highest prices paid anywhere in the world, while still on the tree. Forty thousand acres of finest apple land still undeveloped. One hundred thousand horsepower going to waste in its streams. Population, 6000; value fruit products, 1907, $400,000; value lumber output, 1907, $750,000; taxable property, $2,700,000; bank deposits, 1901, $36,000; 1907, $690,494.31. Railroad and water transportation. Two hours from Portland, twelve hours from Seattle and Spokane. Rural mail delivery. Phone service covering city and valley. Let us tell you about it. Address

PUBLICITY COMMITTEE

HOOD RIVER COMMERCIAL CLUB

Do it now—today *HOOD RIVER, OREGON*

Hood River Opportunities

Any of these will make you a beautiful home and a safe investment

437.—20 acres 5 miles out on the East Side; 5 acres in 6-year-old trees, 4 acres in 2 and 3-year-old trees, balance in 1-year-old trees; all good varieties. Small house and barn; on main traveled road; near school, church, stores and railway station; A1 apple land. Price $9,500.

451.—40 acres 5½ miles out on East Side; 25 acres in trees from 2 to 12 years old, good part in bearing; all but 4 acres first-class apple land; near school, stores, church and railway station; 6-room house, small barn, all farm tools. Price $11,000. Terms.

441.—18 acres; 7 acres in trees from 1 to 4 years old, 6 acres strawberries, 3 acres clover, 1 acre uncleared. Small house and good barn and windmill. Price $10,500. Terms.

LEM.—10 acres 3 miles out, West Side; 3 acres 3-year-old trees, 3 acres 1-year-old trees, balance in clover; beautiful building site; 10-inch water stock. Price $6,000. Very easy terms.

470.—9 acres 1½ miles out on main road; all first-class apple land; 3½ acres 4-year-old trees, 4 acres 2-year-old Spits and Newts, 1½ acres hay, 5 inches water stock. Will sell 7 or 9 acres for $700 per acre.

477.—20 acres 7½ miles out on East Side; 6 acres plowed and ready for trees, about 11 acres slashed and ready to pull; all first-class apple land. Very sightly building location not far from Hood river. Price $2,300. Very easy terms.

473.—20 acres in Crapper district; 4 acres 10-year-old Spits, Newts, Ben Davis, etc., 3 acres 1-year-old Spits, 2 acres 2-year-old Spits, ½ acre 6-year-old home orchard, 2½ acres alfalfa, 1 acre strawberries between the trees, 3 acres ready for crop, balance uncleared; 2-story 7-room house, good barn, sheds, chicken houses, etc.; farm tools, stock, etc. Price $12,000. Half cash, easy terms.

235.—203 acres in Mount Hood district, 12½ miles from town; 50 acres in cultivation; 8 acres in orchard, good variety of trees, 1 acre strawberries, 40 acres timothy, alfalfa and clover, balance in vegetables. One new 11-room house and one smaller house, two large barns, sheds, etc.; complete blacksmith outfit, farm tools and implements; household furniture; all livestock, wagons, hack and harness; 150 acres good timber; all first-class apple land; on main road. Price $20,000.

We have what you want. If you do not see it here, write for our complete list

J. H. Heilbronner & Co.

THE RELIABLE DEALERS

Portland Office *Hood River Office*
408 Corbett Building *Davidson Building*

BETTER FRUIT

A MONTHLY ILLUSTRATED MAGAZINE PUBLISHED IN THE INTEREST OF UP-TO-DATE AND PROGRESSIVE FRUIT GROWING AND MARKETING

PICKING, PACKING AND SHIPPING BETTER FRUIT

BY E. H. SHEPARD, HOOD RIVER, OREGON

A GREAT many articles have been written on picking, packing and marketing fruit. "Better Fruit" published in 1906 a splendid packing edition referring entirely to apples. In 1907 the September edition contained the best article ever published, entitled, "The Apple From Orchard to Market." Both of these previous packing numbers were very extensive and extremely well written by people who made a very thorough investigation of the different systems in use. They were the comments of an observer instead of one who had actually done every detail of the business. The writer of this article grew up in an orchard, is the owner of an orchard in Hood River, and has managed the unions of Hood River for several years, consequently he does not feel that it is assuming on his part to endeavor to describe methods which in his opinion seem to have been at least an improvement on the past.

It is the intention of the writer to make this article as practical as possible, as plain as possible, and at the same time brief.

Ladders

There is perhaps nothing more important than the proper kind of a ladder to use in picking any variety of fruit. The grower does not want a clumsy ladder. He wants a light ladder, and the smaller it is without sacrificing strength the better it will be. One of the best ladders for picking in a vase-shaped tree is a ladder invented by A. I. Mason, of Hood River, called the tripod ladder, as shown in figures 1 and 2. Figure 1 shows two of these ladders which are required in picking a tree. Each ladder is a tripod hinged to a circular base. One of each of these ladders is placed on the opposite side of the tree and a plank laid on top. Figure 1 shows the picker on the plank in the middle of the tree. The plank can be placed on the rounds so as to make it at any height from the ground. Figure 2 shows this ladder in the open, which gives a very clear idea of its construction. This ladder is more particularly adapted to the vase-shaped tree.

Figure 3 is a ladder generally used in Colorado, and I believe it is the best all-round ladder made for low-headed trees. It is very light. The particular advantage of this ladder is that the foot rests are on each side of the perpendicular support, consequently there is but one upright to go against the tree. The foot rests on each side slip in between the limbs, and for this reason fewer apples will be knocked off in picking and fewer bruised.

Figure 4 illustrates another splendid ladder which is adapted not only to low trees, but to taller ones, for the reason that the front and back of the ladder are on a hinge and the back part can be extended, resting against the top of the tree, enabling a man to go higher up in a tree than he can with the ladder represented in figure 3. Both of these ladders, as represented in figures 3 and 4, are inexpensive, and I believe the most generally all round satisfactory ladders.

Figure 5 represents a novelty ladder developed by Mr. Galligan, an orchardist. Users of this ladder claim they can pick more apples from it than from any other ladder. The writer has never used one, but it is my impression that it would not be adaptable to all purposes as the other ladders already mentioned.

Figure 6 represents a small table that is very important in handling a crop and we believe a great time saver. It can be used by the pickers in picking the apples that can be reached while standing on the ground. As the table is just about the height of a man's waist, the picker can pick directly into the box, saving considerable backache and at the same time saving considerable labor and bruising—doing away with the emptying of the apples from the bucket into the box. There is another important consideration in connection with this table, and that is, where a grower insists on using his shipping boxes in the field, it prevents them from being soiled by being placed on the ground. I want to say right here that I believe every grower should use orchard boxes, and never place an empty box, in which he intends to ship out fancy fruit, on the ground to become soiled. Of course, this means quite an expense the first year, but orchard boxes will last a great many years, and by using them, all the boxes to be shipped will remain in the packing house and go out to the consumer absolutely clean.

Picking

The grower works a year to produce a crop of fruit. Why should he sacri-

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FIGURE 1—LIBERTY ORCHARD, HOOD RIVER, OREGON. TWO TRIPOD LADDERS, WITH PLANK RESTING ON EACH RUNNING THROUGH THE VASE-SHAPED TREE. WITH A. I. MASON, OWNER, STANDING ON THE PLANK PICKING APPLES

fice any per cent of it by rough handling in picking? Many growers do. While apples are not eggs, they should be handled just as carefully. Every apple that is picked from the tree should be placed in the bucket or basket and not dropped in. Each apple after being picked should be placed in the bucket in such a careful manner that there is not the slightest possibility of bruising it. While we are picking this year's crop we should bear in mind that there are crops to follow, and the fruit spurs that are knocked off this year will not produce apples next year. Pickers should be watched closely by an overseer and the number of spurs knocked off should be kept down to the smallest possible minimum.

Generally speaking, fruit is ready to be picked when the stem separates from the tree easily. There is a certain time when every fruit is ready to be picked for shipment according to distance, and that is the proper time to pick it. The right time to pick fruit cannot be described in words. It can only be taught in the orchard and can be learned in no other way. I might add that as much loss, in the opinion of the writer, occurs from picking fruit too green or lacking in color as occurs from picking fruit too ripe. As a matter of fact, founded on experience, fruit that is ripe, but at the same time firm, will be more saleable on the market when it reaches its destination than fruit that is picked too green. This is particularly true when fruit is shipped under refrigeration. But many growers want to get through with the picking too quickly, and instead of making two or three pickings, or several, endeavor to pick the fruit clean. Positively this will not do, and whenever a man tries it he will suffer a loss when his fruit goes to market, and in nine cases out of ten blame the commission man or fruit seller for something that is his own fault.

The manner in which fruit is grasped in picking is very important. The picker should not grasp the fruit and press down with the ends of the fingers, because by so doing fruit can be easily bruised. The picker should surround the fruit with his hand and fingers, having the fruit rest gently in the hollow of the hand, the fingers touching lightly all around, then raise the fruit up slightly, which makes it separate more easily from the tree, and at the same time give a gentle pull.

Picking Buckets

There are several kinds of packages used in picking fruit. The basket, several kinds of buckets and picking bags. The bucket and basket I think are the best. In picking into a bag the swing of the bag knocking against the tree or ladder naturally causes more or less bruising. This is avoidable by the use of the bucket or basket. While the expense of transferring from the picking package into the field box by hand is quite an item, it is my opinion that it is justified in every case, at least where a man is picking fancy fruit for which he will expect a big price. If, however, the grower prefers to run the risk of some bruising by pouring from the picking package into the field box, the best bucket for him to use is the one illustrated in figure 7, which is made just wide enough so it fits down into the box, allowing fruit to be poured into the box without any dropping.

Figure 2—THE MASON TRIPOD LADDER

Hauling

Every orchardist should have a low wagon for hauling the fruit from the orchard to the packing-house. Figure 8 shows one of the low wagons, another is shown in figure 9 with a load of apples in the orchard. The low wagon will be out of the way of hanging limbs and in driving through the orchard will not knock off the spurs and a lot of apples from the tree as one of the old-fashioned high-frame farm wagons in

such general use. In addition to this it is a great saving for the further reason that a box of fruit can be placed on the wagon from either side and only has to be raised half the height, which is a great saving in labor. One teamster can load this style of a wagon, whereas with the old style wagon it is necessary to have a man in the wagon and one to pass the fruit up to him.

Mr. J. W. Perkins, of Medford, has made an improvement in the bed of the low wagon by making it a three-decker. This enables him to haul three times as many apples from the orchard at one load as with a single bed. In this arrangement no box of apples rests on top of another box. This does away with all possibility of bruising. In the making of his wagon bed the bottom of each platform is made V-shaped, so that from the center it inclines outward at an upward angle, which prevents the boxes from slipping off and at the same time makes it easier to slip the boxes on to the wagon or to slip them off than when the platform is perfectly flat with a raised edge around it, as shown in figure 8.

Figure 11—PACKING PEARS. FRUIT GROWERS' ASSOCIATION, MEDFORD, OREGON

Packing House and Packing Tables

One of the essential requirements for handling the fruit crop to the best advantage is a proper packing house. This should be roomy enough to meet all requirements. The size of the house, of course, must depend on the size of the crop to be handled and how much of the crop will be stored in the house at one time. In the case of summer or fall fruits, such as cherries, peaches, prunes, grapes, etc., they are packed and shipped as fast as they come in, but with the apple crop it is different. When the apple crop is harvested in many localities the rainy season is on, and there must be sufficient room to contain a large quantity of apples in the packing house. Some days you can pick and some days you cannot on account of the weather. Furthermore, a grower may want to store in his packing house certain quantities of some varieties to be held for an advance in the market. Generally speaking, the quicker the crop is packed after it is picked the better, but it is also true that if a man is going to store apples for an advance in the market they should be stored in a cold storage warehouse instead of an ordinary warehouse or cool storage. The packing room should be divided off, at least in an apple warehouse, from the balance, as this has to be used in winter time when a fire will be required for the comfort of packers. There should be no fire where fruit is stored. The packing room should be well ventilated and above all have plenty of windows so as to give a good and sufficient light, but at the same time the grower must not overlook the fact that in the fall and winter the days are short and it gets dark early, consequently arrangements should be made to light the packing room by either electricity or Rochester lamps. In storing apples in the packing house from the field, where field boxes are used, if they are not filled too full, and they should not be, one box can be piled on top of the other. If the shipping boxes are used, and come from the orchard full, small cleats about one inch thick should be laid on top of the ends of each box, so that when one box is piled on top of another there can be absolutely no bruising.

Figure 11 shows the fruit packing house of the Medford Fruit Growers' Association during pear picking season. The packers stand at a long table side by side. On the right hand side of the packer is the bin for placing the pears before being packed. The bottom of this bin is either sackcloth or canvas. Each packer stands in front of his box and packs from the bin with the right hand, and at the left of each packer is a place for the wrapping paper. An empty box is placed at the side of the packer for the culls.

Figure 12 shows a style of packing table used by the Yakima County Horticultural Union at North Yakima, Washington. This union uses packing tables for six people, as illustrated in figure 12. Figure 13 shows a packing table arranged for four people used in Hood River. Figure 14 shows a packing table arranged for two people. This can be arranged for right or left hand packers, or both right or both left hand. This

style of table is more practical where the packing is done in the packing house of the grower, as growers' packing houses are generally smaller than union packing houses. The style of table used in figure 14, having a larger area for holding the apples to be packed and consequently holding more apples, renders it easier for the packer to pack apples and grade to size. This table has a wooden frame, as shown in the illustration. The top of all packing tables should be made either of sack cloth or canvas.

Grading and Culling

The grading and sorting of most fruit is done when the fruit is being packed, but the grading and culling of apples should be done before the packers begin their work. Some growers believe in wiping apples and some do not. I believe that apples should be wiped for the reason that they certainly will present a more attractive appearance to the purchaser than they will when partially covered with spray. The expense is small and the wiping is easily done if the apples are immediately wiped after being picked. Some varieties of apples if allowed to stand after being picked are very difficult to wipe. In wiping an apple it should not be rubbed. The object is not to polish the apple, but simply to remove what dust there may be upon the fruit and more particularly the dabs of spray which a great many are afraid of on account of their poisonous nature. However, I might say that chemists have analyzed the quantity of spray and have ascertained that it takes the spray on 600 apples to make a minimum dose of poison that would be dangerous.

Figure 4 shows a step ladder used very extensively through the West. One of its main features different from other ladders is that the length of the ladder can be doubled by turning the back standard of the ladder up so as to form a straight line with the stile part and making a solid ladder by turning a little thumb screw on each side, which fastens the connections so they cannot come out of place. The wooden rod running through the center of the standard part can be pushed out and fastened by a thumb screw, making another extension of about five feet. This ladder is patented and made by the Zaun Ladder and Manufacturing Company, Portland, Oregon.

Grading and sorting apples depends on the variety of apple, the market in which it is to be sold, and the price, as to the class of workmanship that is essential. Fancy apples must certainly be well culled. By that I mean no box of fancy apples should contain a bruised apple, a wormy apple, a stung apple, a limb-rubbed apple, or apple that has scab, fungus, scale, or any other defect or disease that would mar the appearance or affect the quality to any extent. In the second grade of apples, generally known as choice, minor defects are allowed; culling must be in accordance with established standards and market price. Generally speaking, dealers of fancy apples prefer what is known as a uniform pack. By that I mean all the apples in one box should be of a certain size. Hood River was the first to establish this style of pack and adhere to it strictly. The trade that is supplied by Hood River seem to prefer this uniformity of size.

Figure 6—TABLES TO HOLD BOXES. USED IN PICKING APPLES THAT CAN BE REACHED BY PICKER STANDING ON GROUND

Figure 10 shows a simple device, a plain board with holes in, to assist the grower in sorting the apples to uniformity of size. The board is hung up in front of the wiper or grader. Four holes are all that are necessary. Any apple that will just go through the small hole and not fill the second sized hole is a 4½-tier apple. Any apple that will just go through the second sized hole and not fill the third sized hole is a 4-tier apple. Any apple that will just go through the third sized hole and not fill the fourth sized hole is a 3½-tier apple. Any apple that will just go through the fourth sized hole, or somewhat larger, will make a 3-tier apple. By this system of sorting to size you have reduced the quantity of apples to go on the packing table at one time to 4½ tier, 4 tier, 3½ and 3 tier, which does away with a good deal of unnecessary pawing over of apples by the packers in packing to uniformity of size.

The following is a classification of apples contained in each box according to the tier labeling as used by the trade: Three-tier apples are as follows: 45 to the box, 54 to the box; 3½ tier contains 64, 72, 80, 84 and 88; 4-tier apples contain 96, 104, 112, 120 and 128; 4½-tier apples contain 150, 165 and 175; 5-tier apples contain 200 and 225 to the box. There are two special packs sometimes used, the 144, which is midway between the 4 and 4½-tier apple. In my opinion 185 should be classed really as a 5-tier apple, and, I might add, the fewer 5-tier apples that go on the market the better off the fruit grower will be. The cider factory is the best place for them. The above number of apples to the box is where uniformity of size is desired. The two sized boxes adopted by the Northwestern Fruit Growers' Association are as follows: Inside measurement of the standard box, sometimes known as the Oregon, is 10½x11½x18. The inside measurement of the special, sometimes known as the California box, is 10x11x20. Where different sized boxes are used, either the size of the apple according to number would vary, or if the same sized apple was used as is used in this method in these boxes, the number of apples in the box would vary. This system and these sized boxes have been found to meet the requirements of a high-class pack, that is, as far as uniformity goes. In packing to uniformity of size a Hood River man has invented a packing table which is shown in illustrations 15 and 16. The table for holding the boxes that are to be packed is circular and the table board is arranged on a revolving base, which enables the operator to pack four boxes of apples of different size without stopping to set the boxes off the table when all the apples of one size are exhausted on the table. For instance, to illustrate what I mean, if a packer is packing 4-tier apples, 96, 104, 112 and 128, when he has packed all the 96s that are on the table, he swings the revolving base and begins on the 104. After packing off the 104s, he gives the table another swing and begins on 112. After finishing 112s, he gives the table another swing and takes the 128s. This saves considerable labor on the part of the packer as it does away with setting off the boxes, and at the same time it does away with the necessity of having a great lot of apples piled on the packing table at one time so that the packer can

Figure 8—ORCHARD WAGON USED BY E. H. SHEPARD

get what he wants, which in a large measure decreases the possibility of bruising.

Packing

Figure 17 is an object lesson; it being an illustration of a dishonest farmer's pack of apples. The apples are not well packed, and where the wrappers have been removed, worm holes, fungus and other defects can easily be seen. This illustration is put in for comparison, and the reader and grower of fruit can compare it with the illustrations of good packs that follow and decide for himself what style of pack he wants to put up. This photograph was taken from a box of apples as delivered at a warehouse, and was not prepared for this occasion. The apples on the sides, top and bottom of the box that appear in the picture were good apples. The others that are unwrapped, as shown in the picture, as you will see by close observation, although the picture is small, were not decent culls.

There are two styles of packs known as the square and diagonal pack. Some sized apples in the Northwestern Fruitgrowers' Association boxes will pack out on the square and other sizes will pack out on the diagonal. The diagonal pack, in the opinion of the writer, is the preferable pack for the reason that less bruising will occur in transit, as one apple in this pack presses in between the two apples adjoining, which are in the form of a triangle, instead of the side of one apple pressing directly against the side of another apple as is the case in the square pack. It is also desirable for the further reason that the packer in packing this style can press the apples into place firmly on the diagonal across the box instead of having to jam them, so to speak, as he does in the square pack.

It is not necessary to go into the detail of describing the pack of each particular sized apple according to the number contained in the box, for the reason that the style of nearly every pack from 45 to 200 is illustrated in figures 18 to 28 inclusive. In these illustrations the wrappers have been removed from the top layer so that the reader can more easily see the arrangement for the pack of any particular number of apples to the box. Generally speaking, the stem end, as much as possible, of all apples should be placed outwards to the bottom, top and sides. However, this is not at all times practical, and it is not necessary to be done at the expense of uniformity of pack, and should not be done when by so doing a sacrifice of pack will be the result. In order to produce a tight, firm pack and a swell in the middle of the top and bottom, it is necessary to change the position of the apple, packing some apples on the side. This is particularly true in reference to producing a swell on certain varieties, and in order to get the top layer down level at the ends of the box it is necessary to put either the stem or blossom end up, and in such cases do not forget to put the stem end up, as it will stand the pressure of the lid better, and if bruised by this pressure the bruise is on a part of the apple which does not show when displayed on the fruit stand for sale.

Figure 10—GRADING BOARD

Attention is called to figures 27 and 28 showing different swells. One swell is too low; one swell is too high, and the middle swell is just about right. There is some difference of opinion expressed in different districts with different associations and with different individuals as to the proper swell. Southern Oregon packs a much larger swell than Hood River, but the writer has given this feature the very closest observation and examined apples after they had been taken out of cars and corresponded with the receivers after the apples had been shipped to England, before arriving at a conclusion. When I took charge of the Hood River Apple Growers' Union I found a good many packers were putting up and advocating a swell anywhere from one and one-half to two inches, and sometimes more, that is, on top and bottom combined. This swell I reduced from one to one and one-half inches at most, top and bottom combined, and upon the closest inquiry I have not yet found a single instance where slackness was reported.

Figure 7—MASON TABLE AND PAILS

Paper

Every apple should be wrapped in Duplex paper. The box should be lined with white paper, and a layer of paper, which is usually made in blue especially for this purpose, should be placed between every layer of apples. Also in the bottom of the box and on the top before the lid is nailed on.

Packing Pears

Figure 29 shows a beautiful commercial pack of Bartlett pears put up at Medford by the Medford Fruit Growers' Association. The packing of pears is a very difficult matter. It requires expert workmanship. Pears require a much tighter pack and a much heavier swell than apples. Figure 30 shows a pack of Anjou pears packed by Joseph A. Wilson, Hood River, Oregon, containing 80 pears to the box. Figure 31 is an illustration furnished by the Yakima County Horticultural Union illustrating a pack of Winter Nellis and Burre Easter pears. This magnificent illustration shows 4-tier packs, 68, 72, 88 and 100 to the box, and 5-tier boxes, 150 and 180. The sides have been removed so as to show the placing of each layer of pears. The diagonal pack is universal in packing pears. Each illustration shows the pears wrapped. Attention is called to the fact that the pears at the end of the box are placed with the blossom end toward the end of the box. This is more noticeable in the Bartlett pears in illustration 29 than in either of the other illustrations of pear packs.

As to the proper degree of maturity for pears for shipment, I might say that it is useless to try to tell it in words. It is something that the pear grower and packer has to learn by observation and by actual experience from those who know. However, there is one thing more that is very important that must be said in a limited space, and that is that pears should be picked when the day is cool. If there is heat in pears when they are packed and go into an iced car no amount of ice will save them. A great many districts during warm days will only pick their pears during the morning hours. Much experimental work is being done on a process of precooling, and it is hoped and expected that the pre-cooling will prove to be as important as is generally supposed. A special machine has been invented and is being tested in California for precooling a car after it is loaded. Other districts place the packed fruit in a cold

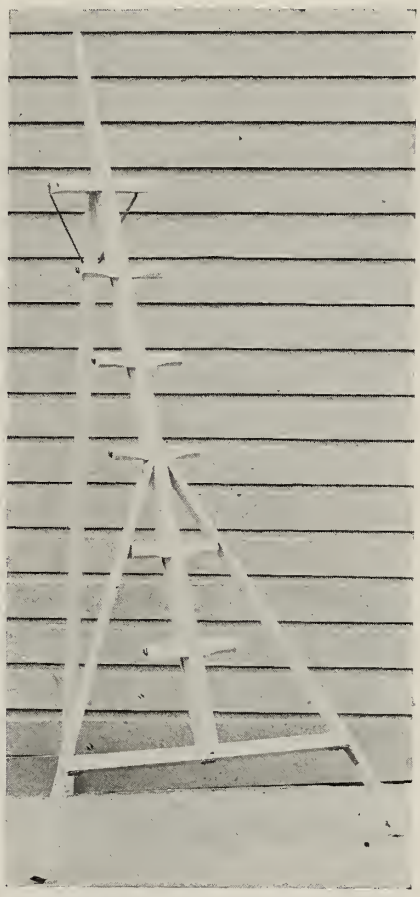

Figure 3 shows a fruit-picking ladder different from any other placed on the market. Its simplicity and lightness make it a great favorite wherever it is used. It is strong enough to hold up anybody who is able to climb a ladder, and still it is light enough so that most anybody able to pick fruit can move it themselves from place to place, dispensing with extra help to move the ladder for children that help pick fruit. Another very important advantage of this ladder is that it takes up so little room that it can be placed right among the limbs of the trees without knocking off any fruit spurs, which, when done, considerably decreases the next year's fruit crop. The part of the ladder above the steps is tapered to nearly a point and the corners rounded, so that the ladder can be placed in the crotch of strong limbs without injury to the limb, which is another great advantage over other ladders. This ladder was invented and patented by A. A. Smith of Paonia, Colorado, and Mr. John Day and Mr. Gray of Medford, Oregon, are the selling agents for Southern Oregon, while McReynolds & Co. of Hood River, Oregon, have the agency for Wasco County, Oregon. Orders sent to the above named parties will receive prompt attention.

storage plant at a very low temperature for the purpose of pre-cooling before loading into the iced car.

Packing Peaches

Peaches should be picked just at the right stage of maturity for shipment, but more particularly for long distance shipment in iced cars. Picking peaches is very different from picking apples for the reason the ripening period is extended over a greater length of time, consequently a greater number of pickings will have to be made. The peaches should be picked just exactly at the right time so far as possible. There is no excuse for picking a peach too green, and peaches that become too ripe before being picked should be culled out and not shipped long distances.

Figure 32 shows a good pack of peaches which one of the representatives of "Better Fruit" had taken for this paper at Ashland, Oregon. There are three grades of peaches, F, containing 44 to 64, which means fancy; A, from 64 to 80, and B, 80 to 90. In cut 32 the box on the right hand side contains 44; the middle box contains 66; the box on the left hand side contains 90. The diagonal pack is preferable in packing peaches, where possible, for the reason it does away with the direct pressure when the lid is nailed on. The Grand Junction Fruit Growers' Association of Colorado advises its growers that it is not considered best to pack peaches smaller than 90 to the box. Each peach should be wrapped in Duplex paper. In wrapping it is desirable to have the wrapper, where folded, go either on the top or bottom so as to form a cushion when the lid is nailed on.

Quinces

Figure 34 illustrates three fancy packs of quinces, which are packed in the same sized boxes as pears. The right hand box shows 64 quinces to the box, the middle box shows 80 quinces to the box and the left hand box shows 100 to the box. On account of the irregularity in shape, it is difficult to put out a fancy pack in quinces with the proper swell and at the same time have proper firmness.

Cherries

Cherries require several pickings and due care should be exercised to have the cherry at the proper stage of maturity when picked for shipment, which necessitates several pickings. No cherry should be packed without a stem. Figure 35 shows an illustration of cherries packed in cartons. The carton is a very popular package for fancy trade. Each carton contains about one pound, which is a package already wrapped for the fruitseller to deliver to the retail customer. One large box contains eight cartons. However, the ten-pound box is the one most generally used. An illustration of a ten-pound box is not shown in this issue for the reason that so many illustrations of the different packs of cherries were shown in the August issue, to which our readers are referred. Cherries should be packed in layers. This is far preferable to packing one layer and filling in the rest. The bottom of the box, which will be opened, should have the right side of every cherry face up. Many people do not know there are two sides to a cherry. The wrong side is creased and is not as well rounded out as the other side. The full round side of the cherry is the side that should be put on the top layer when the box is opened. Cherries in ten-pound boxes usually pack 8x9, 9x9, 9x10, 10x10 and 11x11. Anything smaller than this should really not be packed. The diagonal pack has been introduced comparatively recently in cherry packing, as well as in packing apples, peaches, pears and quinces. The Dalles, Oregon, was the first district to introduce the diagonal pack in cherries so far as the writer knows. Do not put your cherries in the box by handfuls. Cherries suffer as severely from slack packing as almost any other fruit. In the white cherries, such as the Royal Ann variety, bruising turns black and disfigures the cherry. To put up a good, firm pack with the proper swell and a full box is absolutely important if you wish your cherries to arrive in good condition and bring good money at the other end.

Figure 35 shows very completely a carton in process of packing. The box at the left hand shows the carton ready to be closed, the box in the middle shows the carton as closed, and the box at the right hand side shows the bottom of the carton, which becomes the top when placed in the box ready for shipment.

Prunes

Fresh prunes are usually packed in five-pound baskets. Four baskets are

FIGURE 9—LOW ORCHARD WAGON, HAULING APPLES AT PICKING TIME IN BEAR CREEK ORCHARD, MEDFORD, OREGON. OWNED BY C. HUNT LEWIS

FIGURE 5—GALLIGAN'S ORCHARD CART; A NEW APPARATUS FOR PICKING APPLES
This cart, which has recently been put in use at Hood River, is said by those who have used it to be better than a ladder for picking fruit from low-headed trees. The advantages claimed for it are that more apples can be picked from one setting than three settings of the ladder. When not in use the ladder attached to the cart can be folded up and the cart moved from one point to another with very little trouble. It is about four and one-half feet high; platform three by five feet, and the wheels are of iron, well braced. It is manufactured by J. R. Galligan of Hood River, who has applied for a patent.

put in a crate. The packing, paper and crate are similar to that used for apricots. Prunes are one of the big fruit industries. There is a growing demand for fresh prunes, and there has always been a big demand for dried prunes which is steadily increasing. The Willamette Valley grows prunes more extensively than any other locality in Oregon. Idaho raises an immense crop of prunes in the Snake River Valley. Idaho being near to market is a great shipper of fresh prunes. We hope in the near future to have an excellent article on the prune industry written by an expert familiar with the business.

Figure 33 shows a good pack of prunes.

Apricots

Apricots, like peaches, require a number of pickings in order to get them at just the right stage of maturity for shipment. It is the same with apricots as it is with other fruits, the better they are graded, the more perfectly they are packed, the better condition will be at destination and the better results the grower will get. Figure 36 shows an excellent pack of apricots for which the Wenatchee Valley is celebrated. The box has four baskets, each basket has three layers. Three layers make the pack of apricots the most attractive, as the crease should all be turned one way, that is, on the top layer. In the bottom layers the position of each apricot must be varied so as to have the pack firm and at the same time bring the top layer at the right height in the basket so that when it is put in the crate, which contains four baskets, and the lid nailed on, the pressure will not be too great. The lining paper is placed in the basket similar to the way it is placed in packing prunes, so that it can be folded backwards and forwards between each layer of apricots and over the top layer. The illustration as shown in figure 36 shows an excellent and beautiful pack of apricots. This photograph, like all the other illustrations in this paper, was either taken by us or supplied for "Better Fruit." A basket usually contains five pounds and four baskets fill a crate, making twenty pounds to the box.

Figure 12—GOOD FORM OF PACKING TABLE FOR APPLES AND PEARS IN USE BY THE YAKIMA COUNTY HORTICULTURAL UNION

Nailing Boxes

Figure 37 shows an ordinary nailing press used in most up-to-date districts in the Northwest. Figure 38 shows a small press used by some growers in Hood River, and in some ways it is considered to be a slight improvement. Figure 39 shows a similar press used in Colorado. It is made lighter for the reason that much packing is done in Colorado in the orchards, and this style nailing machine can be more easily transported from one place to another. It is manufactured by W. L. Goyett, Canon City, Colorado. The press illustrated in figure 37 is manufactured by the Davidson Fruit Company, Hood River, Oregon. The object in using a nailing press is manyfold. No pressure is brought to bear on the lid of the box except at the extreme ends of the lid which are grasped by the arms, easily seen in figure 37. The lid is placed on the top of the box, with the two cleats at the end, when the lever is pressed down with the foot, which is shown in the front of the illustration, the two arms close in on top of the cleats, which are held in place until the box can be prorerly nailed. In figure 39 the nailer has to hold the cleats in place. Use cement-coated nails in making and nailing boxes. Pearson's cement-coated nails I know to be good.

Labels

Every association and shipping firm should have a fancy label for fruit, for the reason it adds very materially to the attractiveness of the package and assists very materially in selling. And in addition to this it assists in establishing a reputation. If your fruit is fancy and is put up fancy and labeled, the consumer will like it and ask for more of the same brand. A label is an important factor in creating a demand for fruit. Have your state in great, big letters and assist in building up, creating and establishing a demand for Northwest fruits—the best in the land.

Every grower should have a rubber stamp or a small stencil and mark in the upper right hand corner of the box his name and address. On the end of the box a rubber stamp should be used, where the information is not contained on the label, to designate the variety of the fruit, the grade and the tier, or the number of fruits contained in the package.

Loading Cars

Figure 40 shows a car of apples finished. In loading a car of apples there

Figure 14—TABLE IN GENERAL USE AT HOOD RIVER

are eight boxes across the car, five high, making 40 in a tier. Laths are placed on the third row across and on the top row to prevent shifting.

In loading pears in a car the boxes are placed on the side the same as apples, but as pears are more delicate shippers and as the weather is warmer at this time of year, a space is left between each box for the circulation of air. Boxes of strawberries, peaches and cherries are placed in the car on the flat side. Each box is lathed down so as to hold it in place and get a more perfect circulation of air, with a space between each.

Figure 41 illustrates the last act of the shipper, bracing the car. Good, strong bracing is used, never less than 2x4, and 2x6 being preferable. After the cross pieces are nailed in the uprights are nailed on, and then the cross pieces between, which must be good full length, are driven down with a sledge hammer tight and then nailed firm and securely in place. This last act is a very important part of the shipper and must be well and properly done. The writer has sent out hundreds of cars of fruit without ever having a bracing in a single car give way.

Fruit in the Market

Illustration 42 shows a high-class fruit grown in the Wenatchee Valley, that has been properly handled and properly packed, after it has been transported from the orchard to destination and on sale at a fruit stand. The attention of the reader is called to this fact. If everything has been well done, as it has been done as shown in this illustration, and if all the directions have been followed that have been given in this article, the grower's fruit should look just as perfect when it reaches market as it does in figure 42.

An honest pack is the noblest work of the fruit grower.

FIGURE 31—FANCY PACK OF WINTER NELLIS AND BEURRE EASTER PEARS, SHOWING FOUR AND FIVE-TIER SIZES
The sides of the boxes have been removed to show all the tiers and the number of pears in each box. Packed by H. Archibald for the Yakima County Horticultural Union

BETTER FRUIT COVER

BETTER FRUIT has published twenty-seven editions. The cover page of each edition has cost us a great deal of money and is in itself a beautiful picture of some scene referring to the fruit industry—a picture that most any one would find an ornament in the household if suitably framed. This idea was original with us, but has been copied by many other journals since "Better Fruit" began publication, but none have attempted the high class color work that appears in "Better Fruit." It is our intention to always make this a beautiful page. We have been offered big prices for the privilege of running an advertisement on the cover page of "Better Fruit," but "Better Fruit" is the pride of the Northwest, the greatest fruit growing section in the world, and we want to tell our readers and advertisers right now that they will never see an advertisement on the cover page of "Better Fruit," no matter what price is offered.

Advertising in "Better Fruit" gets results, for the reason that "Better Fruit" is the handsomest fruit paper and the best published in the world and taken by almost every prosperous fruit grower in the Northwest, with subscribers in every state and territory in the Union. Our results have been so satisfactory, and the paper so attractive, that we have always been crowded to our limit with advertising. Every month we have had to close our forms to advertisers for the reason that our space was all taken.

THE SIZING, GRADING AND PACKING OF APPLES

BY M. O. LOWNSDALE, LAFAYETTE, OREGON

DEFINITE sizing and absolute grading are the A, B and C of a perfect pack of apples. The term "grading" refers of course to selection for quality and not size. It has always been a problem to deliver a perfectly sized and graded product to the packer at the minimum of expense. Orchardists have devised many operations to achieve this result and each has found that he must adapt his methods to his individual needs and circumstances. Many years ago I found that, to handle apples in a large way in my locality, new and untried methods must be devised. All the well-known operations of handling such fruit were employed, and each in turn was abandoned as being too expensive, too slow, or not being equal to our local conditions. In the Willamette Valley, apples, when brought from the orchards, carry considerable spray material, or dust, or possibly dirt. Many prime apples from our low-headed trees are found on the ground, especially where orchards are well cultivated and the soil soft. If autumn rains have commenced these apples must be cleaned before storing or packing, for if packing be long delayed they will have no lustre at packing time. To meet these conditions, especially in seasons of heavy rains and large crops, when picking is extended over several weeks, I have devised and tried out many new methods, selecting the best qualities of each, until I have perfected a satisfactory plan of operations.

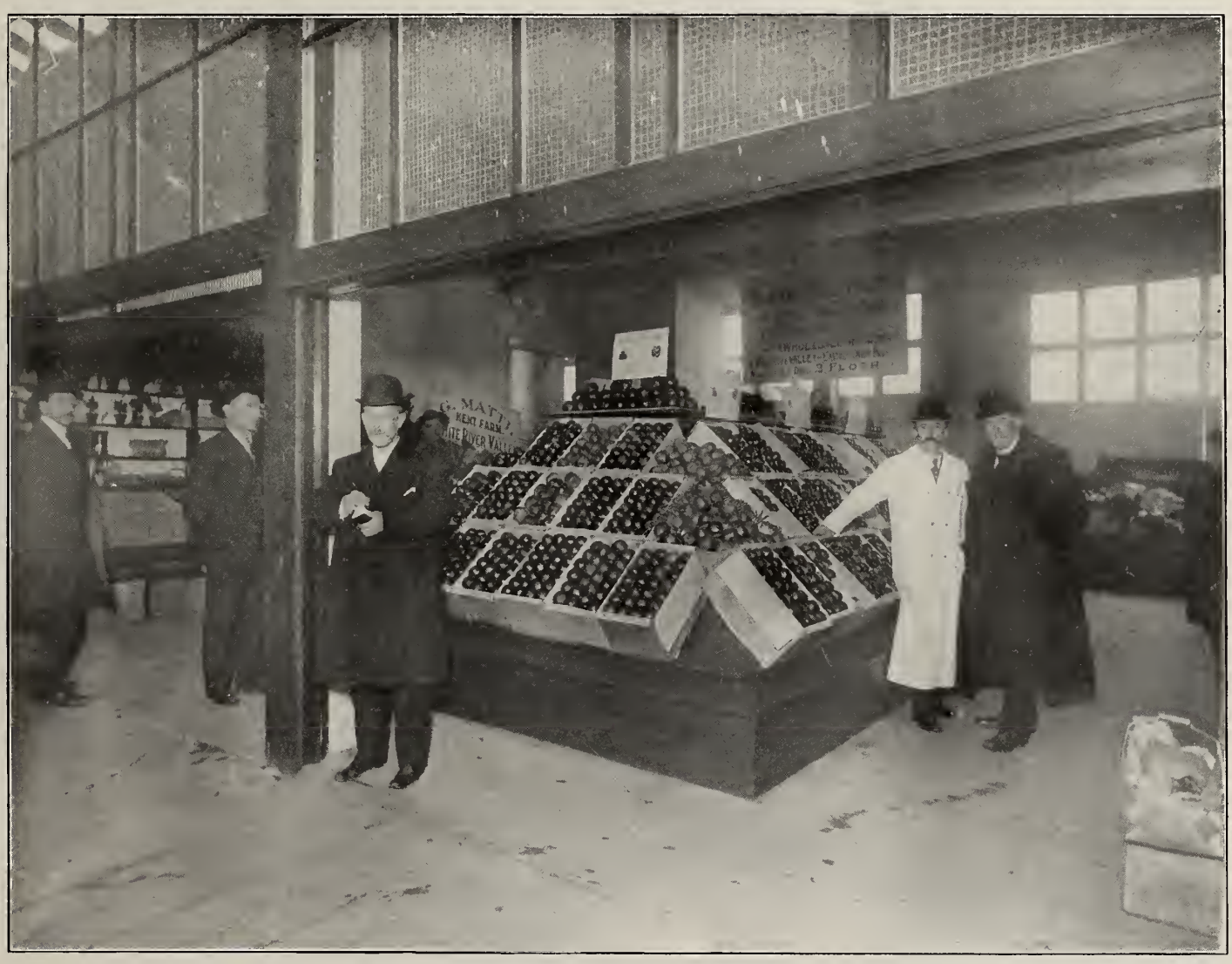

FIGURE 42—GOOD APPLE PACKING. JOHN B. OLLINGER (IN WHITE COAT), SALESMAN IN CHARGE OF WENATCHEE FRUIT GROWERS' ASSOCIATION; CHARLIE REED (IN FUR OVERCOAT), A PROMINENT WENATCHEE FRUIT MAN

Apples are delivered to the packing house as they come from the orchard—all sizes, varieties and grades mixed together indiscriminately. They are carefully dumped into a tank of water, whence they are led to a circular brush, six feet in diameter, revolving under water, which by its centrifugal motion carries them against stationary brushes at its circumference, and hurries the fruit along under hanging brushes that adjust themselves to apples of any size and turn the fruit over and over until it is thoroughly cleaned. When they have completed the circle the apples are taken up by an automatic dipper, lifted from the tank and deposited on a specially constructed sizer. Here they are separated into four sizes and run at once out upon traveling belts, where the grading is done by sorters, who simply put the different qualities and varieties into their proper compartments on the belts. The apples then run off automatically into lath trays, which are taken to the warehouse on cars, hoisted by cranes and piled up thirty trays high. These operations are practically all completed by machinery, and the fruit is handled so delicately that all bruising is avoided and its keeping quality not impaired in the least. Not only is rough manual handling eliminated, but exactness in sizing is more nearly reached. The sizing board used in some localities was abandoned many years ago in my packing house, because more accurate and rapid work can be done by machinery on the bulk of an apple crop.

To perfect these washing, sizing and grading operations has required many years' study and experimentation, but the result is well worth the trouble and expense of the work.

Assuming the product to be sized, graded and sorted perfectly, it is not a difficult matter to turn out a fine pack. Without precision in these preliminary operations it is difficult to produce exact

results. The details of packing have been treated elsewhere more accurately than the limits of the present paper will allow and I will only speak in a general way of some individual methods.

For many years in my packing house apples that pack four-tier in the standard Oregon box have been packed two and two in the modified California box. The use of this pack avoids the bruise often shown where apples are crowded side by side into a box. This adaptation of an old orange pack has of late years been frequently followed in other fruit sections, and is often spoken of (rather inaccurately, I think) as the diagonal or diamond pack. The genuine diamond pack is a vagabond off-set pack and presents such a slovenly appearance that it should never be tolerated in an up-to-date packing house. I would call it the "delirium tremens" pack. But the two and two or three and one-half tier pack, and the three and two or four and one-half tier pack, will pack almost all apples, and as these packs carry fruit without bruising they should be adopted universally. These are now the official packs of the Willamette Valley Apple Growers' Association, having been adopted at a meeting held during the recent Cherry Fair at Salem. No prime apples should be packed side by side, and by changing from standard box to the special or long box, or vice versa, according to size, all apples can be made to conform to these packs, and damage in carriage will be reduced to the minimum. For instance, Spitzenbergs which would pack four tiers in the special box should be packed three and two in the standard box, and the size be designated by number. In appearance these would seem to be large four and one-half tiers, but the number would tell the tale.

The Willamette Valley Apple Growers' Association will attempt to avoid quotations containing the term "tier" and compel acceptance of fruit "as packed," giving numbers as the distinctive standard instead of tiers.

For several years I have used printed wrappers of colored paper made especially for my work. Green, purple and yellow wrappers have been the most effective, and in this respect my pack has during the past season been followed by some of the great packing firms in California. Multi-colored cut tissue has also been used in my fancy grades for several seasons and has added materially to the attractiveness of the pack.

In the Willamette Valley many varieties of apples are of types peculiar to the locality and require boxes whose specifications differ somewhat from such localities as Hood River or Rogue River. For instance, to pack 112s in the standard box we must have a length of at least eighteen and three-quarter inches. This trouble is obviated by packing such apples two and two in the special box. The individuality, or peculiarity in form, of valley apples is so striking and so constant that it is often necessary to vary the size of both the standard and special box to accommodate all varieties. The standard Oregon box used in the Willamette Valley is 11½x11x18 inches, which is varied to 11½x10¾x18¾ inches. The special or California box is 11x10x20½ inches, varied to 11x9¾x21 inches. All these are inside measurements. Specifications of my boxes call for sides three-eighths of an inch and tops and bottoms five thirty-seconds and no more.

It will never be possible to adopt a uniform box for all sections of Oregon, and any legislation to this effect, national or otherwise, is sure to be of no avail. The difference in size, however, is so slight that by the adoption of uniform methods of packing the result will be satisfactory and the reputation of Oregon apples will be enhanced. There has been a disposition of late to avoid all sectional controversies and to build up the fame of Oregon's exceptional apples, and in no way could this result be achieved more readily than by the establishment of a uniform output. The best methods of packing the best fruit in the world should be uniformly established in all sections of the best state in the Union.

Patent Applied for

FIGURE 16—PARKER'S REVOLVING PACKING APPARATUS, HOOD RIVER, OREGON
This is a new packing outfit invented by a Hood River man, and consists of a hexagonal packing table from which four packers can work at once and pack four sizes of apples. Instead of having to sort the apples carefully, they can be placed on the table, and as the packer uses all of one size that are near him he can turn the stand on which the boxes rest and pack another size in the next box, and so on. It is claimed for it that more work can be done in less time and with less chance of bruising the fruit. The above represents the positions of the packers while at work.

FIGURE 15—PARKER'S REVOLVING PACKING APPARATUS, HOOD RIVER, OREGON
Illustration to show how it is constructed. The revolving stand in the foreground works on a spindle. It holds four boxes and also hoods for wrappers.

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COVER CROPS SUITABLE FOR NORTHWEST STATES

BY J. LOUIS ROBERTS

FRUIT growing in the western states of Oregon, Washington, Idaho and Montana holds a peculiar position in the field of horticulture. These states have been successful fruit producers. Yet this success has been due not so much to the skill of the grower as to ideal climatic and soil conditions. Most of the growers knew little or nothing of fruit growing when they began their operations. Had they been dependent on their skill alone, it is doubtful if the industry would have fared as well. Even today the industry is not what it might be. I am inclined to believe that often too much thought is given to packing and marketing, at the expense of methods of growing. For this reason, it would seem advisable that one important phase that has not received its share of thought should be brought to the attention of growers.

FIGURE 13—PACKING TABLE FOR FOUR PACKERS

For some time there has grown an increasing need of organic matter or humus in our soils, and, in some localities, of nitrogen, potash and phosphoric acid. And this need of humus is nowhere more strongly felt than in the semi-arid sage brush districts.

There are several reasons to which may be assigned this requirement. In the first place, many western soils naturally lack humus. Second, intensive methods of cultivation have depleted the natural supply. Third, the intense heat of the sun's rays has burnt up much organic matter, and, last, no humus has been supplied.

FIGURE 22—THREE AND ONE HALF TIER (80)

The most satisfactory method of replenishing the supply is the sowing of cover crops. A cover crop is one sown for securing physical, chemical and mulching properties on or within the soil between the growing seasons of the regular crops or the normal seasons of tillage. It may be valuable as a cover in that it may protect the land from injurious effects of frost and also kill out weeds; and as a green manure, in that it will supply humus, thus augmenting the fertility and moisture-holding capacity of the soil when turned under. And it may add fertility. The cover crop may ameliorate the land in nine ways. Physically, it may improve the soil by holding the rains and snows until they have soaked into the soil; drying out the soil in spring, thus making earlier tillage possible; by preventing the cementing and puddling of stiff, hard soils; by stiffening and holding down light, drifty soils; and by killing out obnoxious weeds. It may improve the chemical soil conditions by adding humus; by rendering plant food available; by catching and holding leaching nitrates; and by appropriating free atmospheric nitrogen if the cover crop is leguminous.

The relation of cover crops to moisture has been a source of popular confusion. Some argue that since plants naturally exhale moisture, a crop would dry out the soil. Others, however, claim that a cover crop, by virtue of its shading capacity, must conserve moisture. While these parties are correct to some extent, they miss the whole truth. If a crop occupied the ground the year around, thus preventing culture, drying out would naturally occur. A cover crop, however, is not planted until cultivation is discontinued, by which time any damage due to drying out will already have occurred. It is desirable that the trees be checked rather than stimulated at this time of year, in that they may harden and mature against the coming winter. A cover crop will aid in this by appropriating nitrates and moisture for its own growth.

Cover crops may be divided into two groups, leguminous and non-leguminous, which may be subdivided, one subdivision being known as humus producers and the other as potash "unlockers." To the first group belong common and hairy vetch, Canada and cow peas, field and soy beans, red, crimson and mammoth clover, alfalfa and in fact most of the plants which appropriate free atmospheric nitrogen. In the first subdivision of the second group are placed rye, oats and other grasses as simply humus producers, and in the second subdivision cowhorn turnips, rape, kale, etc., as potash "unlockers." The groups are based upon the fact that nodules of various shapes and sizes are found on the roots of leguminous plants. They are formed by the action of bacteria which find entrance to the roots through the root hairs. These bacteria are commonly known as "nitrogen fixers," because of their ability to collect and store free nitrogen of the air within the tubercles formed by their action. This nitrogen eventually becomes available to the plants growing on the soil. The tubercles are most in evidence during the earlier period of the growth of the legumes. The greater number of them decay and become shrunken later in the season, their nitrogen contents having been taken up by other plants. Rye, oats, grasses, turnips and rape do not collect free atmospheric nitrogen, but when returned to the soil give back only what they have unlocked or withdrawn from it. However, they add organic matter to the soil, unlock plant food, and have a generally ameliorating effect. Whenever a cover crop is used, make it fulfill a definite purpose. Before sowing, determine what certain results plants will bring about. It is generally advisable to grow a plant which answers both for a cover and green manure, although it is possible to make some soils too nitrogenous for some fruits, which induces wood growth at the expense of fruitfulness, or too late a growth in the season, in which case winter killing may result. This may be especially apparent on peaches, apricots and the like. If, however, your trees need nitrogen, they will show it by producing a small, light green foliage and a small wood growth. For purposes of cover and protection the non-leguminous plants may be just as good as the legumes. And when the trees are growing vigorously, showing dark green, luxurious foliage and a heavy wood growth, they may be decidedly better than the legumes. For while they still act as covers, they do not overstimulate growth, in that they do not add free atmospheric nitrogen. Beware of this oversupplying of nitrogen.

Possibly your fruit is poorly colored, its keeping qualities are poor, or that the young wood hardens with difficulty. If this be the case, it is advisable to sow a cover crop which will supply potash. For trees plentifully supplied with this element are more likely to form firm, hard wood, produce highly colored fruit, and less liable to damage by cold and the attacks of fungi and insects than if there is a preponderance of nitrogen present. Cowhorn turnips and rape are valuable in this role. It may be said that legumes form humus of a higher moisture-retaining capacity than the non-legumes, such

FIGURE 17—SAMPLE OF A CARELESS FARMER'S PACK, SHOWING NECESSITY FOR A RIGID SYSTEM OF INSPECTION. COMPARE WITH ILLUSTRATIONS FOLLOWING

as oats and rye. Thus, if a cover crop is desired on a piece of wet land, a non-legume such as oats or rye should be sown. For we would receive the beneficial effects of the cover crop and at the same time minimize the addition of moisture to the soil.

In selecting the cover crop, a recent writer has said: "The choice of the proper crop is a local problem, just as the determination of the method of tillage or the method of pruning is. Not all soils can be treated alike. The soils are unlike, conditions differ, and no one should know the peculiarities of a soil better than the man who tills it. He should study it carefully, become acquainted with its peculiarities, and then he is in a position to handle it to the best advantage. No other person can know as much about a given piece of land as the intelligent man who studies it as he works and tills it. He, in the end, should be best able to decide whether he will sow a legume, a non-legume or no cover crop at all. The amount of fertility in the soil, the amount of available moisture, the physical qualities of the soil, and the climatic conditions are the more or less known quantities with which he must work out the equation of fruit production."

When the different conditions prevailing in different sections of the northwest are brought to mind, and again, the different conditions in each section, it may readily be seen that no one treatment will be best for all orchards. Likewise, there is no one cover crop which is best for all purposes and under all conditions. Hence, in discussing this subject, it will be impossible to select a definite cover crop which will succeed in every locality. It will be possible only to state certain crops, which in general do well in a locality, their peculiarities, possibilities, etc.

Generally speaking, it may be said that the non-legumes will do equally well in the different sections of the northwest. This, however, cannot be said of the legumes. For these plants possess different degrees of hardiness. Thus, in discussing the legumes, some attention must be given to their adaptability to the different sections.

The common vetch is one of the best legumes for northwestern conditions. In degree of hardiness and frost resistance it stands next to its cousin, hairy vetch. It is adapted to a wide range. It will grow well throughout Oregon in Rogue River, Willamette Valley, Southern Idaho and Hood River, and in seasons of temperate, mild winters will survive even in Western and Central Washington. It usually makes a good, even stand, grows rapidly, surviving moderate winters, and in spring pushes forward and obtains a growth of two feet and more. The stems and foliage are tender and may be turned under without difficulty. If the frosts or freezes of winter kill this vetch it will lie down like a thin, even covering of hay and will mat down under the snow into a perfect carpet-like covering. This plant finds its greatest adaptability on soils ranging from light clay loams to heavy clays. And I have even seen it thriving on a light, drifty sand. It should be sown at the rate of fifty pounds per acre. Common vetch and rye make a good combination, in that the rye will support the vetch, thus preventing its matting too closely. If such a combination is desirable, plant forty pounds of vetch and ten pounds of rye to the acre. Never, however, plant them together when the soil is noticeably lacking in moisture, for poor results will obtain. Common vetch seed can usually be obtained for five to six cents a pound.

Hairy vetch is, in a great many respects, like its cousin, the common vetch. They differ chiefly in their ability to withstand cold. Hairy vetch thrives better in a cold climate than common vetch. It will not prove as valuable as common vetch in Rogue River, Willamette Valley and the lower valley of Hood River. But it will do better usually in Eastern, Western and Central Washington, Montana, Northern Idaho and British Columbia than its cousin. Plant at the same rate as common vetch. The combination with rye is likewise practicable. Both the vetches will prove wonderful fertilizers, in that they both appropriate large quantities of free nitrogen and at the same time unlock large amounts of potash and phosphoric acid. Hairy vetch seed will cost from twelve to fifteen cents per pound. Hence it is economical to grow common vetch whenever possible. It may be advisable to experiment with common vetch in the cold sections, to ascertain whether it will survive the winter, for the very reason of its economy over hairy vetch.

Figure 18—THREE-TIER (54), FOUR-TIER (112), AND THREE AND ONE-HALF-TIER (72). APPLES PACKED ON THEIR SIDES

Canada peas also make a very fine cover crop, especially for such sections as the Rogue River and Willamette Valley, as it will usually survive the winters there. It will not usually survive those of Hood River, Washington, Montana, Idaho and British Columbia. Still, it may often be found valuable in these districts and particularly in those sections in which fall rains come late. For it is a large-seeded plant and will often germinate when lack of moisture fails to germinate the vetches. Also, it makes a rank, quick growth in the fall, which on being killed by frost acts as a cover of the finest kind. Canada peas should be sown at the rate of one hundred pounds per acre. The seed will cost from three to five cents per pound.

In some sections, a modification of the cover crop is used. For instance, in North Yakima, Washington, where a light, drifty soil often predominates, it may be advisable to sow some legume, as alfalfa or clover, and allow it to remain for several years, especially through the early life of the orchard. By this method, the drifting of the soil and the refraction of the sun's rays are prevented, thus saving the cost of labor in replacing drifted soil and sun scalding of the tree trunk and exposed limbs. This practice, however, is impossible unless the grower has a surplus of irrigation water at his disposal, because these crops require larger amounts of water and will take it at the expense of the tree.

Alfalfa has been used for this purpose and, in some ways, is valuable, especially if the continuation of this practice for a number of years is desired, for it does not require reseeding as often as clover. Although it is claimed that this system

Figure 20—FOUR-TIER (104, 120 AND 128). ALL PACK IN THE "SPECIAL" BOX

is successful, I do not advocate it for two reasons. First, I fear it is apt to produce an oversupply of nitrogen in the soil, which inevitably will produce a soft heavy wood growth, liable to attacks of insects and fungi in summer and winter killing. If the soil should thus become over supplied with nitrogen, it would be necessary to plant corn, potatoes, or some such crop, to relieve it. Second, I do not advise this system for no other reason than the fact that poor or no tillage usually accompany poor methods of spraying, pruning and packing. Give a cover crop or a rotation of cover crops a trial. They have a tendency to stiffen and darken light sandy soils. If this remedy fails, use the above method as a last resort.

The humus crops may be used to advantage in a wet soil well supplied with the elements of plant food, and again in a light soil lacking in humus alone. Rye will fit in well under such circumstances. It thrives upon a great variety of soils, demands little preparation, the seeds are large and germinate at a low temperature, it can be sown late in the season after cultivated crops have been removed, and it is exceedingly hardy. For a good stand not less than one and a quarter bushels should be sown to the acre.

Oats have the same general effect as rye, though they do not thrive as well under adverse conditions. Forty pounds to the acre is the advisable rate of sowing oats.

The potash cover crops are valuable in unlocking stored-up plant food. Turnips and rape completely cover the land and add enormous amounts of humus when decayed. Turnips are valuable to begin the improvement of hard lands much inclined to drying out. They should be sown at the rate of two pounds per acre. At this rate they will kill out the weediest field. Dwarf Essex rape should be sown at the rate of ten pounds per acre. Cowhorn turnips can be bought for forty cents a pound and dwarf Essex rape for six to seven cents.

It is possible to plant a combination of seeds each year, in order to obtain a balanced ration. Common or hairy vetch, twenty pounds; cowhorn turnips, twelve ounces, and rye, twenty-five pounds, will make as fine a combination as can be obtained. However, I do not advise this system, for I believe that in a majority of cases it can be evenly distributed over the land. It is in the nature of plants to form colonies, the stronger overcoming the weaker. If a balanced ration is desired, the rotation of cover crops is preferable. And this rotation is earnestly advised. It is equally important as the rotation of general farm crops.

Having selected your cover crop, it now remains to obtain a good even stand. As the crop must, of necessity, be planted at a time when rains are scarce, every effort must be made to supply sufficient moisture to render the germination of the seed possible. Care must be exercised in the preparation of various types of soil. On soils of a stiff texture, the aim should be to secure a deep and fine pulverization, while with soils of a light character, and especially with those inclined to drift, care should be taken to firm the seed bed.

The time of sowing the seeds varies in different localities, from August 15 to September 1. This variation depends on the temperature of the section. As a general rule, it may be said that the earlier date applies to highland sections and the later date to lowland or irrigated districts.

The seed may be sown broadcast, with any suitable form of hand seeder, or with drill. Of these three methods, drilling is preferable, because a more even stand is assured, less seed is required and a limit may be placed on the area of the crop, thus preventing the sowing closer to the trees than will be convenient in turning it under. If sown by hand, it will be necessary to harrow the seed in, and on a light soil the roller will be found indispensible. Remember that the larger seeds require deeper planting than the small seeds.

The cover crop will need no more attention until spring. Then, as early as the land is in condition, turn the cover crop under. Never, under any circumstances, allow the cover crop to go to seed. Far more moisture is required at this period than at any other.

The plow is the best tool with which to turn the crop under. I know of no better tool than the three gang orchard plow. This is a very fine instrument for orchard work. It is a pity that it is not more generally used in the Western orchards.

In conclusion, a few precautions may not come amiss.

Do not be discouraged if you fail to obtain a stand the first year. Remember that it requires humus to produce humus. As the legumes are the most difficult to grow, it would seem advisable to begin the cover cropping system with rye or turnips. The legumes will then be more successful.

Sow more heavily in a dry fall and also where heavy tramping is prevalent. Endeavor to keep off of the crop. For this tramping may not only be disastrous to the crop, but is conducive to harmful effects on the soil, and particularly in winter.

The pasturing of stock or the soiling of cover crops cannot be too strongly condemned. In the first place, the orchard is usually injured by cattle through heavy tramping and by injury to the trees. And in the second place, the trees too often find it difficult to obtain food for themselves without sharing it with the cattle.

Finally, bear in mind that each fruit grower must determine for himself just what cover crops he will use, or whether he will need one. In the great majority of cases, however, a cover crop will be found beneficial. There need be little or no fear that harm will result from a judicious use of them. And great gains may and probably will accrue.

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Almost the whole world knows of Hood River as a place that produces the best fruits, and all of Hood River Valley should know, and could know, that there is one place in Hood River, under the firm name of R. B. Bragg & Co., that the people can depend on getting the most reliable dry goods, clothing, shoes and groceries at the most reasonable prices that are possible; try it.

FIGURE 19—FIVE-TIER (200), FOUR AND ONE-HALF TIER (165), FOUR-TIER (96), WELL PACKED, BUT SHOULD HAVE STEM END EXPOSED TO THE COVER

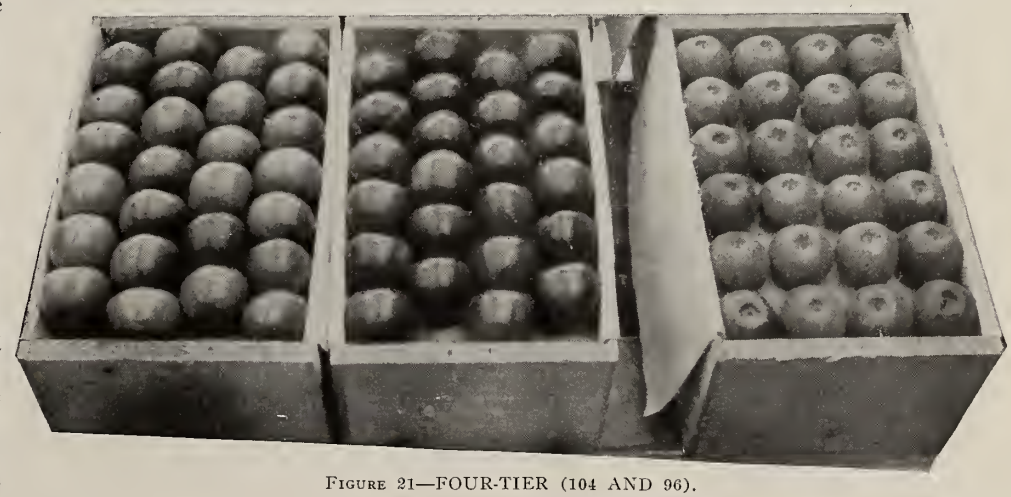

FIGURE 21—FOUR-TIER (104 AND 96).

LIME-SULPHUR SPRAY TO PREVENT APPLE SCAB

THE serious results in the form of "Bordeaux injury" which often follow applications of Bordeaux mixture render it almost imperative that some means be found for reducing this injury, or that some spray be discovered which may be used as a substitute for Bordeaux.

For the past two or three years I have observed, after winter spraying apple and pear trees with lime-sulphur solutions for San Jose scale, that the fruit upon the sprayed trees was less "scabby" than that upon unsprayed trees. Upon two different occasions this winter application was delayed until the blossoms were about to open, and while the spray, which was applied at the full winter strength, did considerable injury at the time, its decidedly beneficial effects were noticeable when the fruit was gathered. The generally good results which follow winter applications of lime-sulphur are now well known, however, and this part of the work requires no further comment. Nevertheless these observations suggested to me the probability that lime-sulphur solution might be used as a substitute for Bordeaux mixture for summer applications, and during the past year I have so used it upon various plants and for various purposes.

It is not proposed at this time to go into details regarding these experiments —I wish only to call attention to some of the results obtained, which show conclusively that lime-sulphur solutions may be used as summer spray without injury to foliage, and also point strongly to the probability that by its use apple scab may be effectually controlled without danger of spray injury to the fruit.

Sufficient work has not been done to justify the statement that lime-sulphur is equal to Bordeaux as a preventive of this disease, but the results of the single season's work point so strongly to this conclusion that I feel justified in calling attention to them, so that growers who have suffered loss from Bordeaux injury, and others who are interested, may make comparative tests of the two sprays the coming season.

In carrying out the work the past season it became necessary, first of all, to determine how strong a solution could be used without injury to the foliage. This, again, made it necessary to adopt some method of "standardizing" the spray. After considerable work we adopted what may be termed the "stock solution" method of preparing the spray and adopted as a standard for the work a "stock solution" having a specific gravity of 1.27. (For determining the specific gravity of the solution while at work in the field we have found the specific gravity hydrometer a very convenient instrument. It is cheap, simple and convenient, and I would recommend every grower who expects to use lime-sulphur as a summer spray to obtain one.)

This solution, similar to the Rex, Niagara and Phoenix lime-sulphur sprays upon the market, any of which would undoubtedly do as well, is of a clear, dark, amber color, is without sediment, and as stated above had a specific gravity of 1.27. Analysis showed that each gallon contained in solution 2.38 pounds of sulphur. During the season of 1907 these "stock solutions" of lime-sulphur were used, variously diluted, upon the apple, pear, peach, plum, prune, quince, cherry, grape, potato and celery.

The results obtained indicated that lime-sulphur sprays produced by diluting one gallon of the stock solution with fifteen gallons of water may be safely used upon all of the above-named plants, with the exception of the peach, unless it may be early in the spring, when very slight injury was produced. For use upon the peach each gallon of solution should be diluted with at least twenty gallons of water.

For the experiments with apple scab, a block of four hundred Yellow Newtown trees was selected, because this variety is particularly susceptible to this disease and because this particular block was known to be badly infested.

The entire orchard was sprayed with lime-sulphur for San Jose scale late in February. The orchard was then divided into two plats. One plat was sprayed with Bordeaux upon April 20, May 8 and May 17. The other plat was sprayed upon the same dates with lime-sulphur solution diluted one to fifteen gallons. Unsprayed trees were left as checks in each plat.

At picking time the fruit was carefully gathered, examined and separated into three grades, to show per cent of fruit absolutely free from scab, slightly scabby and badly scabbed. It was then regraded to show per cent of fruit injured by spray.

The summary of results is shown graphically in the following table. Column marked A shows per cent of fruit free from scab; B, that showing only small scab spots; C, that badly scabbed and unmarketable; D, that showing spray injury:

	A	B	C	D
Unsprayed	19.9	28.7	51.3	0.
Sprayed with Bordeaux	49.1	35.4	15.5	31.9
Sprayed with Lime-Sulphur	79.3	15.3	5.3	0.

It must be remembered in interpreting these results that they represent only one season's work upon one variety, but when taken with the results that have been obtained in spraying other plants they certainly point strongly to the conclusion that lime-sulphur solutions may be a satisfactory substitute for Bordeaux for summer spraying, as they are now for winter applications.

FIGURE 23—GOOD PACK FROM THE SEARS & PORTER ORCHARD

Lime-Sulphur and Arsenate of Lead

Note—Editor "Better Fruit": Since the publication of my article on lime-sulphur as a summer spray for codling moth I have received a number of inquiries regarding the feasibility of adding to it paris green or arsenate of lead, to form a combined spray for codling moth and apple scab. I therefore wish to supplement that article with the statement that in our experiments last season we used arsenate of lead with the lime-sulphur, as well as with the Bordeaux, and as far as could be determined with equally satisfactory results. No injury whatever was produced upon foliage or fruit, and while no careful estimate was made, the percentage of wormy fruit was certainly no greater—apparently less—where the lime-sulphur combination was used.

It is true that when arsenate of lead is added to lime-sulphur solutions there is formed more or less of an olive-colored precipitate of lead sulphides, which which varies in amount directly with the excess of lead present in the lead arsenate. It does not appear to detract in the least from the value of the spray except as it withdraws from solution a small amount of sulphur in the form of lead sulphide.

A. B. CORDLEY.
Oregon Experiment Station.

TREATMENT OF WOOLLY APHIS ON THE APPLE

FROM THE FRUITGROWER

PROFESSOR R. I. SMITH, State Entomologist of Georgia, has contributed some new information regarding the woolly aphis on apple trees, and the results of his work are published in Bulletin No. 23 of the Georgia State Board of Entomology. This bulletin is of more than ordinary interest, on account of the fact that Professor Smith has found that the tobacco-dust treatment which has been recommended by Professor Stedman of Missouri is not very effective in Georgia.

The work of the woolly aphis is generally known; the insect is found in two forms, an aerial form and one form which exists on the roots of apple trees; in the latter form it does most of the damage. The insect secretes a cottony substance, having the appearance of wool of cotton—hence the name, "woolly aphis." When found on the roots it feeds on them and causes enlargements or galls, which differ from the well-known crown gall in that the latter are hard and rough, while the woolly aphis galls are soft and spongy. These galls often become so numerous that the supply of plant food is shut off from the tree, the roots die, and the tree falls over, having no brace roots, and then for the first time the orchardist knows that his trees are affected.

Some years ago Professor Stedman of the University of Missouri found, by repeated tests, that tobacco dust sprinkled about the roots of apple trees, would destroy this insect; a few inches of the surface soil is removed and the dust sprinkled on the soil thus exposed; then the suurface soil is replaced, and rains will leach the tobacco down among the roots and reach the insect.

This treatment has been very effective in Missouri, Ohio and other states, but complaint has come to The Fruit-Grower several times that it is not altogether satisfactory in Colorado and some of the irrigated sections. And now comes Professor Smith and reports that the tobacco dust is not effective in Georgia. Two years ago a bulletin was issued by the Georgia board, in which Professor Stedman's recommendations were quoted. In that bulletin it was recommended to use tobacco dust as a direct remedy for infested apple trees. But now Professor Smith says that his experience has shown that the recommendation of the entomologists of Missouri and Ohio are not entirely applicable to Georgia conditions, however well they may succeed in the states named. He says:

"Tobacco dust does not seem to be of much value as a direct remedy, as we have been led to suppose, though, as will be mentioned, it is of value as a fertilizer and probably may be useful as a preventive measure. Our experiments show that kerosene emulsion is the most efficient remedy, and that tobacco dust is, at the best, doubtful."

The tests reported upon in Professor Smith's bulletin cover a period of two years, and include tests made in orchards and nurseries. When selecting trees for the experiment it was in all cases necessary to examine the trees and leave out those not actually infested with woolly aphis, in order that final results might be fully depended upon. Infested trees were determined by removing the surface soil and examining the roots. Tests were carried on at Morrow and Cornelia, in different parts of the state, and results are fully reported in the bulletin.

The Results of Using Tobacco Dust

In regard to the tobacco treatment, the bulletin says: "All the materials tested were applied to the trees in practically the same manner. That is, the trees were prepared for the application of either tobacco dust, or any of the dry preparations, or for liquid materials, in the following manner:

"The soil was removed from about the base of the trees, in a circle varying according to the size of the trees, to a depth of two to three inches, or enough to partially expose the infested roots. As the trees were prepared the extent of the infestation was noted and recorded and this fact was taken into consideration in determining the result of the various treatments. As already mentioned, only infested trees were used for the experiment. When trees were found on which the aphis were not present, or present in very small numbers, such trees were not included in the test. In that way we eliminated any chance of error because of treating non-infected trees. In the following report it may be understood, unless otherwise stated, that the trees before being treated were prepared as above. In all cases, after the trees were treated with a certain material, the soil was replaced. That is, when tobacco dust was used it was sprinkled evenly in the opening about the trees and the soil filled in on top to the normal level. The same plan was followed when liquids were used; the aim being to get the materials as near as possible to the infested roots.

"The tobacco dust used in the experiment was obtained from a firm in Virginia who sell large quantities of dust to fruit growers to be used as fertilizer and as an insecticide. The material costs about $16 a ton delivered in Atlanta. Tobacco dust was used at both Morrow and Cornelia. At the latter place a double application was made, first in March, 1906, and a second time in July. At Morrow the dust was applied only once, in May, 1905. Both orchard trees and nursery stock were used in the experiment at Morrow, but only orchard trees were treated at Cornelia.

"On account of the great variation in the size of the trees it was found to be difficult to use a given quantity of tobacco dust per tree; instead, varying quantities of dust were used on trees of various sizes, and also varying quantities on trees of about the same size. The trees were prepared for treatment in the manner previously mentioned, that is, by removing the surface soil in a circle varying in diameter with the size of the trees, and with the amount of dust used. The soil was removed enough to nearly expose the surface roots. In some cases a circle three feet in diameter was opened, and in others only two feet, while others had the soil removed in circles of four or five feet in diameter. The variation is shown by the following:

"Tree 1, five pounds of tobacco dust, in four-foot circle; tree 2, two pounds tobacco dust, in two-foot circle; tree 3, three pounds tobacco dust, in three-foot circle; tree 4, three pounds tobacco dust, in five-foot circle; tree 5, seven pounds tobacco dust, in four-foot circle; tree 6,

FIGURE 24—SHOWS GOOD STYLE PACKING BY OSCAR VANDERBILT, HOOD RIVER, OREGON

ten pounds tobacco dust, in five-foot circle; and in other proportions.

"The above figures show that tobacco dust was tested in all conceivable proportions. In all instances the dust was evenly distributed in the opening, and the soil replaced on top to the normal level.

Other preparations were used in these tests, such as applying kainit and tobacco, tobacco stems, carbon bisulphide, etc. All were ineffective except the latter, and it was regarded as dangerous to the health of the tree. In fact, many trees were killed with this preparation.

Kerosene Emulsion Preparation

This is the preparation which gave the best results, and which the author recommends. Kerosene emuulsion was made by using the formula of two gallons of kerosene, one-half pound of whale-oil soap, one gallon of water. This emulsion was diluted with seventeen gallons of water to make a ten per cent solution, with ten and one-third gallons of water to make a fifteen per cent solution, and with seven gallons of water to make a twenty per cent solution. This mixture was used at all strengths, from ten per cent up to forty per cent. Badly infested trees were used, and the trees were prepared for treatment in the manner described in the tobacco dust treatment. The diameter of the circle of earth removed from about the trees varied with the size of the trees and the spread of the infested roots.

Concerning the results of this treatment, Professor Smith says: "Without going into details concerning the different tests of kerosene emulsion it may be stated that all the aphis were killed by every application, from the weakest to the strongest, wherever the emulsion came in contact with the infested roots. In all cases the emulsion was applied in sufficient quantity to saturate the soil to a depth of two and a half to three inches in the opening, after the surface soil was removed, and immediately after treatment the earth was replaced to the normal level. Later examination showed that the emulsion soaked down to a depth of ten or twelve inches in many cases. Hence in practice we do not believe it necessary to use quite as large quantities as was used in our experiments.

"At Morrow, in 1905, the treatment with kerosene emulsion was made on June 2d and 3d. The examination of the treated trees was made July 28th and September 12th, 1905, and again in the spring of 1906. None of the trees showed any sign of being injured by the kerosene. This is remarkable, considering the fact that forty per cent emulsion was used on seven trees in the orchard and on a row seventy-five feet in length of two-year-old nursery stock. This treatment of nursery trees may be considered as a particularly severe test, but no injury resulted.

"At Cornelia in 1906 the treatment with kerosene emulsion was made March 29th and 30th, and the trees were examined May 12th, July 11th, and October 19th. Only two trees were treated with forty per cent emulsion and one of them died completely, while the other showed some sign of injury. The trees treated with 10, 15, 20 and 30 per cent emulsion did not at any time show signs of injury. All the aphis were killed by the emulsion in the circle where the application was made. Trees from which the soil was removed to a distance of two feet on all sides, or in other words, in a circle of over four feet in diameter, were in some instances entirely freed from the aphis. On trees where the earth was not removed over fifteen inches on all sides, live aphis was sometimes found outside the circle receiving the application. These conditions prevailed on all the trees treated with kerosene emulsion. There were no exceptions. Wherever the kerosene emulsion was applied the aphis were killed.

Lasting Effects of Kerosene Emulsion

"It is not enough to state that the emulsion killed all the aphis. It did more. The odor of kerosene remained in the soil for several months and acted as a repellant. Mr. Reed examined trees July 11th which had been treated with twenty per cent emulsion on March 30th, or in other words, three and one-half months after the application, and found that the kerosene odor was quite perceptible in the soil to a depth of twelve inches. Even the ten per cent emulsion was sufficient to cause the earth to smell of kerosene three months after treatment, though the odor was not as strong as where the stronger emulsion was applied. The same condition was observed at Morrow in 1905. Trees treated with twenty per cent emulsion on June 3d were examined September 12th, and at that time, over three months after treatment, the odor of kerosene was detected in the soil.

"As a repellant the kerosene emulsion acts perfectly. It is true that aphis may live outside the circle treated with the emulsion, but as long as the odor of kerosene remains in the soil the young aphis will not work back to the main roots of the trees. Those who are most familiar with the work of the woolly aphis will understand that it is not possible, by any ordinary treatment, to kill the aphis on roots several feet from the trunk of the trees, nor is that necessary.

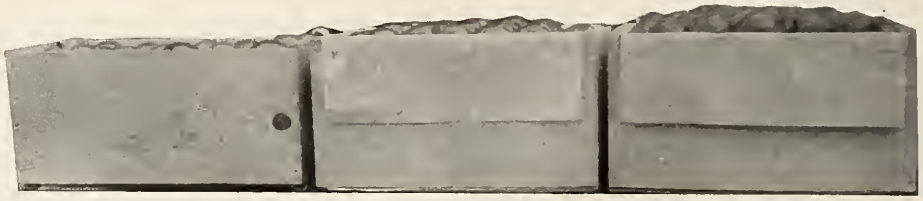

Figure 27—THREE BOXES—TOO FLAT, JUST RIGHT, TOO HIGH

Figure 25—GOOD STYLE PACKING, BY CHRIS DETHMAN ON THE LEFT, N. M. HILL ON THE RIGHT, HOOD RIVER, OREGON

If kept off the main roots for a distance of three feet on all sides, the aphis will not be able to seriously injure such trees. Where the old roots of badly infested trees have been seriously damaged by woolly aphis, if the aphis are killed, and the trees given good attention otherwise, new roots will form to give the trees new life.

Caution Against Using Kerosene Emulsion on Dormant Trees

"Our work with kerosene emulsion does not prove conclusively that it should not be used while trees are dormant, but the result of using forty per cent emulsion at Cornelia, March 29th, before the trees had commenced to grow, would indicate that the emulsion should not be used on orchard trees while they are in a dormant condition. This opinion is strengthened by the results obtained in Georgia and other states from the use of kerosene emulsion on dormant peach trees. We have frequently used the emulsion at twenty and twenty-five per cent strengths, in summer on peach trees without injury, but the same strength used in winter has often proved disastrous. The reason for this is evidently owing to the fact that when the trees are full of sap the kerosene does not penetrate enough to cause injury. This statement is made to help explain why we warn apple growers against using kerosene emulsion on dormant trees. When kerosene emulsion is used at the strength recommended below we do not believe the trees would be injured at any time of year, but in the absence of definite information concerning this point it seems best to recommend kerosene emulsion treatment for spring after the trees commence to grow, or during suummer, before the last of July. In apple orchards where cultivation is not kept up during summer the trees are liable to stop growing after July. Furthermore, when recommending kerosene emulsion for spring or early summer treatment, we consider the fact that much damage from woolly aphis may be prevented if the insects are killed early in the season.

Figure 28—SAME THREE BOXES, Figure 27

What Strength to Use and How Much

"Kerosene emulsion at ten and fifteen per cent strength has proved, in our experiments, to kill all the aphis reached by the emulsion. Twenty and thirty per cent have not injured a single tree. After careful consideration of the subject we believe it best to recommend the use of fifteen per cent emulsion for treating badly infested trees. The odor of the kerosene at fifteen per cent strength will extend further away from the circle of application than the ten per cent strength, and for that reason it will in general be found most thoroughly effective.

"Concerning the amount of emulsion to use the grower must depend largely on his own judgment. The amount should vary with the size of the trees, the degree of infestation, and the spread of the infested roots. In all cases it would be best to remove the soil about fifteen to eighteen inches on all sides of the tree to a depth of two and one-half to three inches, or enough to partially expose the infested roots. In a circle of this size the amount of emulsion necessary to saturate the soil three to four inches deep, will usually be from two and one-half to three gallons. The soil should be fairly dry when the emulsion is applied, if the best results are to be obtained. Large trees, having infested roots spreading out three to four feet on all sides, should be prepared for treatment by removing the soil in a circle of not less than five feet in diameter. For this area it will generally take about five to six gallons of emulsion. In all cases replace the removed soil after the emulsion has been applied.

Cost of Treatment With Kerosene Emulsion

"The cost of applying kerosene emulsion will vary greatly with the size of the trees and the amount necessary to use. The individual may easily figure out the cost for himself. Apple trees from four to ten years of age, if of ordinary size, should be treated at a cost of from four to eight cents per tree. This figure is based on using emulsion at fifteen per cent strength. At ten per cent the cost would be reduced somewhat. Compared with tobacco dust treatment the kerosene emulsion is fully as cheap, and considering the latter treatment may be thoroughly depended upon to kill the aphis, the emulsion might well be considered by far the cheapest. One application of either ten or fifteen per cent emulsion will be found sufficient for one year. We believe that treatment for two years in succession will practically destroy all the aphis on ordinary sized trees. Large trees are naturally more difficult to treat thoroughly, because the aphis may be on roots five or six feet distant from the base of the trees. Of course it is impracticable to attempt to kill the aphis by direct treatment except over a limited area.

Treatment of Nursery Stock With Kerosene Emulsion

"Nurserymen should make use of this treatment. Infested stock may be treated in the field where it is growing, or the trees may be taken up and dipped. Orchardists who purchase stock will find it worth their trouble to dip all stock before planting. For treating nursery stock in the rows we recommend using ten per cent emulsion. This is strong enough, as the roots of the stock do not extend far and the emulsion will reach practically all the aphis. This treatment is easier than treatment of infested orchard trees.

"For dipping nursery trees we recommend the use of fifteen per cent kerosene emulsion. The stock should be freed from all lumps of dirt, and the roots dipped in the emulsion for a minute or two and then spread out to dry for a few minutes. After trees are dipped they should not be piled in heaps, on account of the danger of the drip from the upper trees running

Continued on page 31

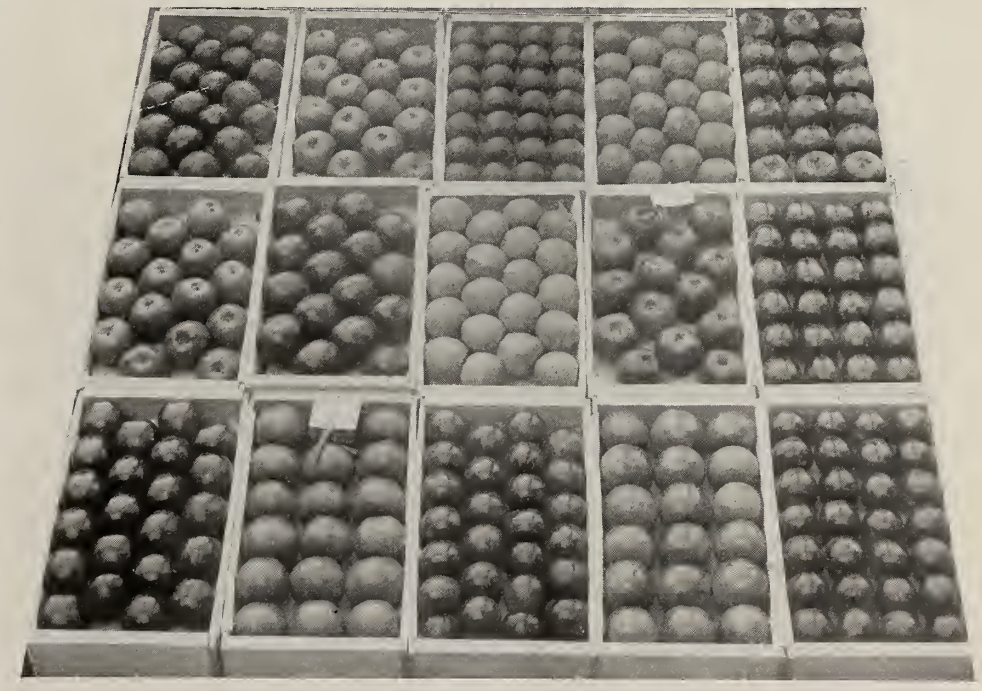

Figure 26—A NICE PACK, BY J. L. CARTER

RULES OF THE WENATCHEE VALLEY ASSOCIATION

GOVERNING THE PICKING, PACKING AND GRADING OF ALL CLASSES OF FRUIT

THE Wenatchee Valley Fruit Growers Association has issued a booklet to the fruit ranchers of the valley, containing rules for picking, packing and grading of fruit.

It is the desire of the Association that the fruit from Wenatchee shall be of uniform grades and conditions and it is to the end of making possible and maintaining certain standards that the booklet is issued.

The Association expects a very large influx of fruit into the markets this week, as the peach crop is nearly ripe and is about due. The Association has offices in the south end of the cannery preparatory to handling the inrush of fruit from now on. Below is given the substance of the rules, as published in the booklet:

I.—All fruit shall be carefully picked at the proper stage of ripeness and laid (not dropped) into buckets or baskets, or into bags that open at the bottom. No windfalls or fruit that drops from the trees from any cause, shall be placed with the picked fruit.

II.—When pouring the fruit from the picking bucket or basket into the boxes, the bucket or basket shall be put down into the box until it rests upon the bottom of the box. The picker shall then place his hand over the fruit, so as to let it into the box gently, that it may not in any way be bruised.

III.—All wagons used for conveying the fruit from the orchard to the packing house and to the shipping station must be supplied with springs, so that there will be no jar to mar or bruise the fruit, and tarpaulins or other covering should be placed over the loads to keep out the heat, dust or rain.

Apples (Summer, Fall and Winter)

IV.—All apples shall be packed in standard size boxes; the boxes must be new and clean. The side pieces shall be nailed with four nails in the end of each piece. Both the top and bottoms shall be cleated and four nails shall be used in each cleat. Not smaller than fivepenny cement nails shall be used throughout.

V.—All boxes shall be lined with paper on the inside, and all apples shall be wrapped, unless otherwise specified.

VI.—The apples shall be firmly packed in boxes in tiers, and each box shall contain a uniform size of apples. The boxes, after being packed, shall not show more than one and one-half inches or less than three-quarters of an inch bulge on both top and bottom inclusive. While the apples must be firmly packed so the boxes will be full and the apples secure in their places, the pack must not be so tight as to bruise the fruit.

VII.—All apples shall be graded in three grades, viz., Extra Fancy, Fancy, and a third grade which shall have no name applied to it.

VIII.—Extra Fancy—In this grade all apples shall be sound, smooth, free from bruises, worms, worm stings or diseases of any kind, and of the proper shape according to the variety. No apples smaller than four and one-half (4½) tier, or two and one-half (2½) inches in diameter shall be allowed in this grade, nor any apples that are of red variety that are not at least three-fourths (¾) red. Yellow Newtowns, White Winter Pearmains, Grimes Golden, Bellflower, Winter Bananas and Red Cheek Pippins will be allowed in this grade, but no other variety of yellow apples. Winter Banana and Red Cheek Pippins must show a red cheek.

IX.—Fancy—In this grade, also, all apples must be smooth, sound, free from bruises, blemishes, worms, worm stings or diseases of any kind, and of proper shape according to variety. No apple smaller than four and one-half (4½) tier or two and one-half (2½) inches in diameter shall be allowed in this grade, excepting five (5) tier apples not less than two and one-fourth (2¼) inches in diameter of the following varieties: Spitzenberg, Winesap, Jonathan, White Winter Pearmain, Yellow Newtown, Missouri Pippin, Fameuse, Jefferies and Grimes Golden. All apples of red variety ranging in color from three-fourths (¾) red down to one-third (⅓) red will be included in this grade. All varieties of yellow apples will also be included.

X.—The third grade shall be made up of all merchantable apples not included in the "Extra Fancy" or "Fancy" grades. These apples must be sound and free from bruises, worm stings, worms and diseases, but will include misshapen apples or apples having a limb mark or other like defect. This grade will include apples of all colors and as small as five-tier or two and one-fourth inches in diameter, but no smaller. This grade must not be wrapped.

XI.—The following marks, made by using rubber stamps (not lead pencils), shall be placed on one end of each box, viz.:

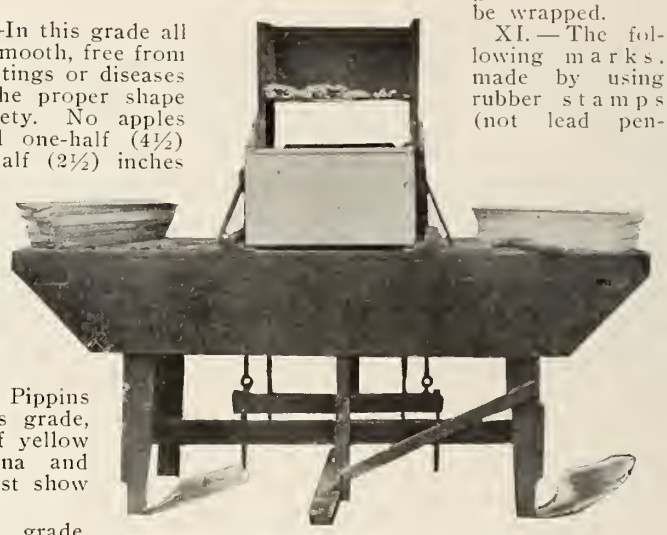

FIGURE 38—THE PRESS USED BY A. I. MASON

The "grower's number" shall be placed in the upper left hand corner: the "grade" at the top of the box and midway from left to right on a line with the "grower's number." The "tier" and "variety" in the upper right hand corner on a line with the "grower's number" and "grade" as follows: Grower No. 50 Extra Fancy 4 Tier W.

The packer's number shall be placed in the lower left hand corner, and if the grower so desires he may stamp his name and address, or the name and address of his farm in the lower right hand corner. Boxes containing fruit too ripe for distant shipment will be marked by making XX with a lead pencil immediately after the packer's number. No other lead pencil marks, or marks or writing of any kind, shall be allowed.

XII.—There shall be no stamp to indicate the grade of the third grade apples. All growers should endeavor not to grow any of these and to keep them off the market as much as possible.

XIII.—After apples are delivered to the Association, the management of the Association shall have stamped upon all "Extra Fancy" and "Fancy" boxes the Association trade mark, and these shall be sold under guarantee of the association. In cases where through ignorance, willfulness, negligence or any other cause, a grower's fruit does not come up to the standard or to the grade as stamped upon his boxes, he shall be charged up with all losses occurring in consequence.

Peaches

XIV.—The growers must learn how and when to pick the peaches. It is

FIGURE 29—A FINE COMMERCIAL PACK OF BARTLETT PEARS

These pears were grown in the Rogue River Valley, near Medford, Oregon, which produces the finest and highest priced pears grown on the Coast. The winter varieties grown there bring fabulous prices, and Bartletts this year netted growers between $2.00 and $3.00 per box. Giving special attention to packing them, the finest pear pack known is put up at Medford

important that they be picked neither too ripe nor too green.

XV.—The peaches shall be packed in new, clean boxes of standard size. All boxes must be nailed with fourpenny nails and two nails must be used in each end of each piece; the top of the box shall be cleated.

XVI.—The diagonal or broken pack must be used in packing all peaches, that is, one peach must not rest squarely on the top of the other. The peaches in each box must be uniform size and packed on end, not on side.

Figure 39—A PRESS OFFERED TO THE TRADE

XVII.—The fruit must be packed securely and firmly in the boxes, so that it will not move, but not so tightly as to bruise it. All peaches must be wrapped and the fold of the paper must be placed on the bottom so peaches will rest on it.

XVIII.—All peaches shall be of proper color according to the variety, sound, smooth and free from bruises, blemishes, worms, worm stings or diseases of any kind.

XIX.—Peaches shall be graded into four grades, as follows: "Extra Fancy," "Fancy," "Choice" and "Common."

XX.—The "Extra Fancy" grade shall be made up of peaches packing not more than seventy-five (75) to the box.

XXI.—"Fancy" grade shall be made up of peaches packing seventy-five (75) to eighty (80) to the box, inclusive.

XXII.—The "Choice" grade shall be made up of peaches packing eighty-one (81) to ninety-six (96) to the box, inclusive.

XXIII—The "Common" grade shall be made up of peaches packing from ninety-seven (97) to one hundred and eight (108) to the box, inclusive.

XXIV.—Peaches that have a defect, such as poor color or dirty, shall be marked down one grade for each defect.

XXV.—All peach boxes shall be stamped in accordance with rule number eleven (11) of these instructions, except-

XXVI.—Rule number thirteen (13) of these instructions shall also apply to peaches.

Pears

XXVII.—Rules number four (4), five (5), seven (7), eleven (11), twelve (12) and thirteen (13), shall also apply to pears.

XXVIII.—The pears shall be firmly packed in boxes in tiers, and each box shall contain pears of a uniform size.

XXIX.—In the "Extra Fancy" and "Fancy" grades, the pears shall be smooth, sound, free from blemishes, bruises, worms, worm stings or diseases of any kind, and of the proper color and shape, according to the variety.

XXX.—The "Extra Fancy" grade shall be made up of pears not less than two and three-quarter (2¾) inches in diameter, and packing not more than five tiers to the box.

XXXI.—The third grade shall be made up of all merchantable pears not included in the "Extra Fancy" and "Fancy" grades. These pears must be sound and free from bruises, worms, worm stings and diseases, but will include misshapen pears or pears having a limb mark or other like defects. This grade may include pears measuring not less than two (2) inches in diameter, and packing not more than five tiers to the box.

Cantaloupes

XXXII.—Rocky Fords shall be graded into "Extra Fancy" and "Fancy" grades. These must be made up of perfect, well netted stock, and each crate must contain cantaloupes of a uniform size.

XXXIII.—"Extra Fancy" crates must be packed three rows to each side and five (5) melons lengthwise, making forty-five (45) to the crate. "Fancy" crates must be packed same as "Extra Fancy" except six (6) melons long, making fifty-four to the crate.

XXXIV.—Rules number thirteen (13) and eleven (11) of these instructions shall apply to cantaloupes, except that the "tier" shall be omitted.

Apricots

XXXV.—Apricots shall be sound and free from defects, in fact perfect in every respect according to variety. They shall be packed in four basket tin-top crates and each basket shall contain a uniform size of 'cots.

XXXVI.—Apricots shall be graded into two grades, viz., "Extra Fancy" and "Fancy." The "Extra Fancy" grade shall include 'cots packing not more than 4x5 in top tier of basket. The "Fancy" grade shall be made up of 'cots packing 5x5. The fruit must be packed firmly in the baskets throughout, and the grading shall be marked in accordance with the number of 'cots in the top tier of each basket.

XXXVII.—Rules 11 and 13 of these instructions shall also apply to apricots.

TREATING OF WOOLLY APHIS ON THE APPLE

Continued from page 29

down and accumulating on the ones below. If this occurred the lower trees would in reality receive a double, or even greater treatment, which might result in severe injury to the stock.

"Nurserymen and orchardists should be cautioned especially against using improperly prepared kerosene emulsion for dipping trees. If the kerosene appears to rise to the top of the bucket, barrel, or whatever is used for dipping the stock, the emulsion should at once be discarded and a fresh supply prepared. Pure kerosene will injure almost any kind of tree, and if one attempts to dip nursery stock in emulsion that shows some free kerosene on top, it is almost like dipping the roots in pure kerosene."

This bulletin is very practical and will be very helpful. It is but another proof of the fact that treatment which is effective in one part of the country is not always effective in other sections.

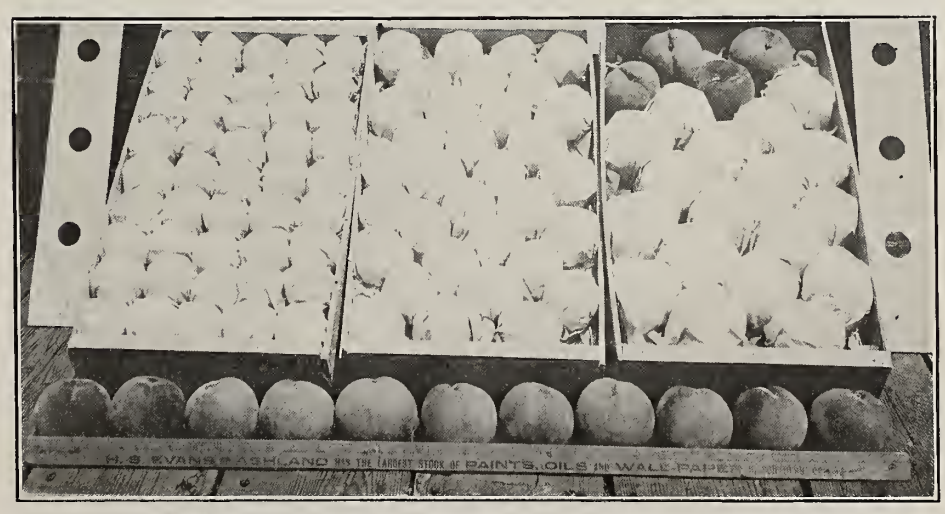

Figure 32—HOW ASHLAND, OREGON, PACKS ITS FANCY PEACHES
The above represents three grades of peaches packed at Ashland by the Ashland Fruit and Produce Association, which is famous for this fruit. The grades here represented are the "F," "A" and "B," the first containing from 44 to 64, the second from 64 to 80, and the third from 80 to 90 peaches. The first grade, as can be seen, is in the box to the right, the next in the middle box, and the third in the box on the left. At the bottom are eleven peaches that measure a yard

HOW TO PREVENT THE SPREAD OF PEAR BLIGHT

PEAR TREES are subject to one of the most fatal disease affecting any plant. This disease is known as blight, or pear blight. It generally begins by attacking the ends of the branches, the leaves of which turn black, shrivel and die and the tree looks as though it had been scorched by fire. If left undisturbed the disease works along the branches, attacking the larger ones and the trunk until finally the whole tree becomes affected and dies.

The disease is due to a minute germ that is carried from tree to tree by insects and probably by other agencies. There is no known specific for blight, but there are certain palliative remedies which will hold the disease in check and if persistently practiced may stamp it out.

The first and main preventive is the removal of all blighted branches. This should be done in the late fall and winter, because at this time the growth of the germ has stopped and its location in the branches can be more surely determined. In removing the diseased twigs one should cut far enough below the diseased portion to be prefectly sure that all the germs and affected wood are taken away. Before cutting off another twig the cutting instrument should be dipped in a poison solution made by adding a teaspoonful of corrosive sublimate to two gallons of water. This solution should be made in a wooden bucket and carried about with the pruner. Every time a branch is cut off the knife or shears should be immersed in the solution in order that germs sticking to the instrument may be killed and not carried to another branch of the tree or to different trees. If this practice is persistently followed in an intelligent manner every winter the disease may be greatly checked if not stamped out. All of the removed branches should be completely burned.

Another precaution to be taken is to remove all water sprouts as close as possible to the tree trunk so that the wounds made in cutting them off may quickly and effectually heal over.

Lastly, the pear trees should be kept from making too great a growth. Trees that grow fast become tender, succulent and sappy and afford a splendid place for the germs to thrive and increase. Trees that are well fertilized and cultivated make too rapid a growth and blight worse. Therefore, we believe that pear trees should be left in the sod and not given too much cultivation or forced to grow too fast.—From a bulletin issued by the Mississippi Experiment Station.

FIGURE 35—CHERRY PACKING IN CARTONS

GOOD OPPORTUNITIES ARE GOING TO WASTE

FROM THE PORTLAND (OREGON) JOURNAL

IT IS a concern of The Journal to get Oregonians to comprehend Oregon. When they grasp adequate conception of the state's real worth, the foundation will be laid for a state growth. We live in the midst of possibilities of which we have little realization. The proof is recorded in letters of fire in the statement that already eight carloads of tinned strawberries have been imported into the state. That importation by a state that can grow the best strawberries in the known world is another case of the ship's crew perishing from thirst on the bosom of the Amazon river. Why didn't we grow and pack those berries at home, keeping at home the money spent for them?

We shipped this season one thousand tons of small fruits to Washington canneries to be packed. We shipped there because Washington had canneries to take care of our fruit, and Oregon had not. Why?

Of the fruits so shipped, four hundred thousand pounds were Willamette Valley cherries, known to be the finest in the world. What a reflection that a section so fertile in fruitage should not have the facilities for packing, especially when the sale of such fruit under an Oregon instead of a Washington label would have been invaluable advertising for the state! Why was it so? California exported in 1906 six thousand cars of tinned fruits. Oregon exported fifty cars. California cherries this season brought growers seven to nine cents a pound. Oregon cherries brought four. The logic of the figures cannot be misunderstood. Californians know and utilize the possibilities of their state; Oregonians do not comprehend Oregon. In producing small fruits, the immense region west of the Cascade range and extending from the California to the Washington line, is an Eden. The soil with each returning season gives up its magnificent fruitage, but man fails to save, market and profit from it. What a real ray of encouragement is the plan of the Southern Pacific by low rates and otherwise to foster and encourage canneries for packing Oregon fruits in Oregon, and marketing them as Oregon products! How promising a field when expert testimony is that Oregon cherries can be profitably packed at eight cents to the grower, while Oregon growers this season got but four!

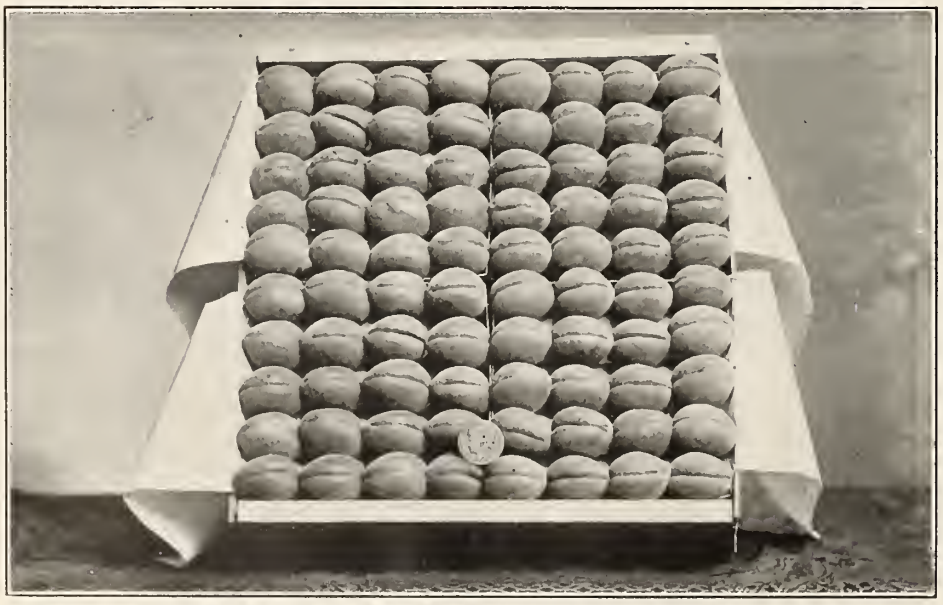

FIGURE 36—BOX OF APRICOTS GROWN AT WENATCHEE
Showing perfect pack. The apricot is not an easy fruit to pack attractively, and the pack here shown is the best we have ever seen. The fruit was grown on the ranch of J. J. Sharp & Son, near Wenatchee, Washington, and packed by C. S. Sharp

IMPORTANT FEATURES IN CHERRY ORCHARDING

FROM THE PACIFIC HOMESTEAD. BY J. R. SHEPARD, OF SALEM, OREGON

MR. JAMES R. SHEPARD, of Salem, Marion County, read the following paper on the above subject at the annual meeting of the Oregon State Horticultural Society, held recently in Portland:

"I never did like being confined within too narrow limits and always wanted more room until in the summer of 1899, when I stood upon the summit of Mount Hood and gazed into the mighty void about me I thought I had reached the acme of the limitless; but when our efficient secretary suggested 'Some Features in Orcharding' as a subject for a paper to be read today the immense latitude he had granted me fairly made me dizzy. Just think for a moment what a variety of topics thrust themselves upon me, each clamoring to be selected as being the most pertinent, or seasonable, or important, or easily prepared.

"Between the old question, 'What exposure is best suited for an orchard?' and the late one, 'What shall be done with our worn-out, pest-ridden, moss-covered old orchards?' lies a mighty ocean whose shoals and rocks are not yet all charted, beneath whose waves lie buried many a wreck, yet an ocean whose waters reach every port, bearing the kingliest commerce of the world.

"I shall, however, discuss but one feature of orcharding—overcrowding—connected with which several side features are involved. There are few orchards in my section—the Willamette Valley—in which the trees are not crowded. I can offer no good explanation for this surprising fact, but have sometimes thought that the cause may be attributed in part to the influence of the table of distances that in the early days was printed in the backs of the new catalogues. The table began with:

"Trees planted sixteen feet apart, 170 to the acre.

"Trees planted eighteen feet apart, 135 to the acre.

"Trees planted twenty feet apart, 110 to the acre.

"I am ready to solemnly aver my belief that had those tables begun with 'trees planted twenty-five feet apart,' very much of the mischief would have been avoided. I remember quite distinctly how in 1883, having consulted one of these catalogues as the only available literature, I went straightway and set out a small apple orchard twenty feet between rows, and when it was finished the poor little switches did seem so lonesome standing so far apart; but a dozen years ago they were embracing one another and, alas, are no longer lonesome.

"A recent number of the Oregon Agriculturist says the prune men are telling the same story as the apple raisers—of trees planted too close. Two or three years ago the magnificent prune orchards on the hills back of Dundee began to crowd each other. W. S. Allan noticed that trees which through some accident have a large amount of open space about them, were yielding twice as large crops as those that were crowded. Most of the growers in that district have been cutting back their trees severely of late, so as to give the sun and air a fair chance.

"A prominent grower in the great Liberty and Rosedale district, south of Salem, told me recently that the growers in that section are discovering the same difficulty, and he expressed the opinion that twenty-five feet is the right distance for prune trees.

"Particularly is the cherry being overcrowded, and what I shall say now applies specially to that splendid fruit, for a very large acreage is being set out in our state, and nearly all of the trees too close. Where land is plenty and labor scarce the wise orchardist will not attempt to obtain the maximum amount of fruit on a minimum amount of land, but a maximum amount of fruit with a minimum amount of labor. The time may come when this advice will have to be reversed. The cheap labor and high-priced land in Europe induces great economy in land. Fruit there never grows so far above the ground as to be beyond the limit of profitable picking.

"There are many problems the cherry grower will have to meet, but none so difficult and perplexing as that of har-

FIGURE 34—YAKIMA QUINCES PACKED IN PEAR BOXES BY H. ARCHIBALD FOR YAKIMA COUNTY HORTICULTURAL UNION. ON ACCOUNT OF IRREGULARITY IN SHAPE THE PACK CANNOT BE MADE TO LOOK SMOOTH

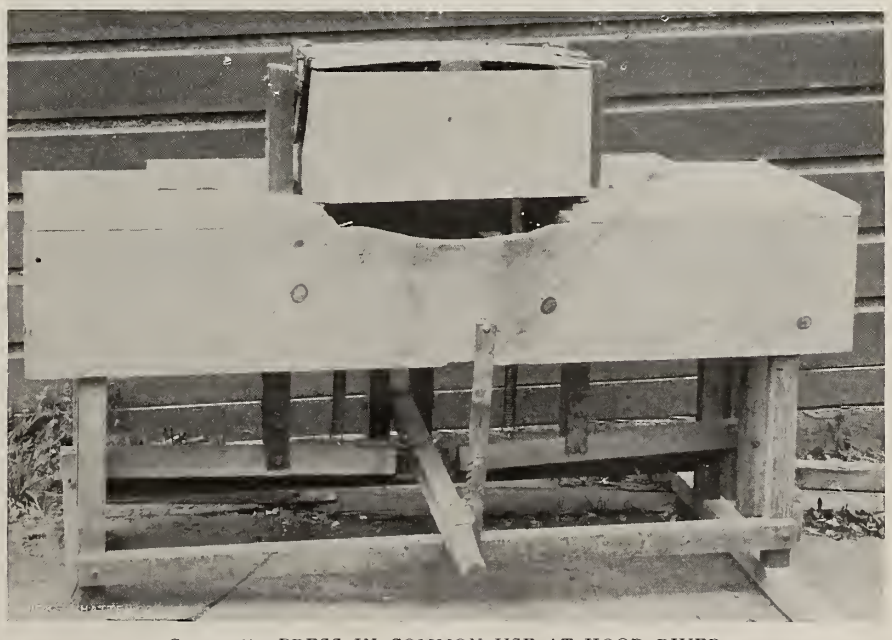

FIGURE 37—PRESS IN COMMON USE AT HOOD RIVER

vesting his fruit—the only small fruit that must be picked from a ladder.

"I am often asked if there is not danger of setting out too many cherry trees. My reply is: Yes, there is danger of setting out more than we can secure pickers for, but no danger of oversupplying the market.

"Let us consider well the difficulties under which our California brothers must be laboring when they are impelled, in the face of popular opinion and race prejudice, to petition for the admission of Asiatics in order that their fruits may be saved.

FIGURE 40—LOADING THE CAR

"In what way, you may ask, will wide setting of trees save labor? I reply: By giving the trees room to make low, spreading tops, which will reduce the labor of picking fully fifty per cent. I have cherry trees at twenty feet apart the tops of which cannot be profitably picked at five cents per pound for the fruit. It requires skilled labor—men or well-grown boys of a certain build—to run up and down a twenty or twenty-four-foot ladder all day long and handle the ladder without serious damage to the tree.

"A cherry tree overcrowded will assume the shape of a closed umbrella. One having plenty of room and properly headed will resemble the same umbrella opened. The low-spreading tree will offer several limbs almost horizontal upon which to quickly adjust an easily handled ladder without destroying the fruit spurs. Girls and boys and even women can pick the fruit. The open head admits the sun and ripens the fruit more evenly, making one less picking necessary.

"Already, with one-fifth of our orchards not yet bearing, we have found a great shortage of pickers at times. Mr. Aspinwall, of Brooks, wrote me a few days ago that he lost largely on his loganberry crop in 1907 through his inability to get pickers. The prune men south of Salem lost one-third of their crop in 1906 in the same way. Had the season been less favorable in 1907, the loss would have been still heavier, for many a grower led a strenuous life for a few weeks trying to secure pickers.

"Not only will a low, spreading tree save fifty per cent of the cost of picking and enable one to ofttimes save a crop that would otherwise be lost, or partially lost, but much expense and labor will be saved in pruning and spraying.

"Leaving the question of labor, there are other reasons why we should give more width between trees than is customary. The cherry makes the most magnificent growth of any fruit tree in Oregon. Its roots run for long distances near the surface, and at twenty-five feet between trees interlace when half grown. Limbs likewise meet and the sun and air are excluded, all resulting in a dwarfed tree, due to starvation. I have heard eloquent denunciations of the practice of pasturing two head of stock where there was only feed for one, from men who were pasturing four trees where but one could find sufficient food. The result is identical in both cases—starvation, little growth, poor fruit.

"I shall not attempt to lay down a rule of distances. Conditions differ so that each one must decide for himself. I am insisting that we have for the most part overcrowded our orchards. Pear and prune trees require much less space than apple trees, and apple trees less than cherry trees. In planting our future orchards let us take heed to the warning of Solomon: 'There is that scattereth and yet increaseth; and there is that withholdest more than is meet and it tendeth to poverty.'"

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BETTER FRUIT is now in its third year. When the second number appeared the universal opinion was that "Better Fruit" would not keep up its standard. This number was an edition of twenty-four pages. As all of our readers know, we have not only kept up the standard, but we have improved it in each issue. We have increased the size of the paper from time to time until we are now publishing regularly an edition of forty-eight pages, which we have continued right through the hardest financial crisis the United States has experienced since 1893, and even during this period we have produced some extra sized editions of fifty-two, fifty-six and as high as sixty pages, when most of the papers which have been publishing forty-eight-page editions have gone to twenty-four. We have done all this when our friends only gave us six months to live, and when they prophesied and continued to prophesy that "Better Fruit" would not keep up its standard. We believe we have done a great work for the fruit industry in the United States. We feel we are entitled to credit, and we think we are justified in claiming more than appreciation. We believe that we are entitled to ask all our friends to assist us in "Better Fruit" with an earnest endeavor on their part to increase the subscription list. We have a bona fide paid subscription of over 5000 subscribers, but we want to increase it. If every subscriber will endeavor to get us a few subscriptions it will be a great help to us, and we will continue to make "Better Fruit" better. We are not going to ask you to do this for nothing, but we will allow 25 per cent commission. We are not asking you to do something for nothing, but are willing to pay you as much as we can afford to, and we need your help, and we hope every man who believes in "Better Fruit," every man who likes it, and every man who desires to see the fruit industry in his section grow, will get busy and take subscriptions for us and send them in.

We have to depend on this method and our friends to increase our subscription list for the reason that no paper whose subscription is in the rural districts, when the price is but $1 per year, can afford to send a solicitor to take subscriptions. This method costs us over $2 for every subscription we take.

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HOW TO COOK YOUR SPRAY FOR SAN JOSE SCALE

BY B. F. HURST, OF BOISE, IDAHO

UNTIL this last year all the orchardists had to cook their lime and sulphur spray in large tanks holding from 100 to 400 gallons, and these must be kept boiling from one and a half to two hours. Another large tank to heat the water was also required.

The accompanying illustration shows the new method discovered and used by B. F. Hurst, by which he cooks enough lime and sulphur to make from 100 gallons to 400 gallons of spray in each barrel. The only heat needed is enough to heat the water with which the solution is diluted.

In using this method of cooking the spray this spring on the Manville fruit farm, Mr. Hurst has sprayed out 3,000 gallons a day, which is enough to cover 500 to 600 large apple trees, or from 1000 to 1500 prune trees. In order to do this amount of work a gasoline engine was used with a pressure of from 150 to 200 pounds. The pump was fitted with two rods, each rod having two nozzles. To avoid loss of time a supply tank was used which brought the spray mixture from the cooking platform to the tank from which it was pumped out.

This supply tank is seen at the extreme right of the picture, loading at the cooking platform. When the supply tank reaches the pump out in the orchard the spray mixture is drawn off through a pipe in such a manner that the spraying is not hindered. The man on the left of the picture has hold of the pump which is used to force the water from the ditch up into the warming tank, the back of which is seen in the picture with the smoke stack attached. Near the smoke stack is another pump which is used to pump the water from the heating tank past the barrels to the supply tank.

The barrels are arranged with a valve in the bottom by which the spray mixture is emptied into this trough, and is carried with the water into the supply tank. Mr. Hurst says the most particular part about the cooking is in properly handling the sulphur. First, it should be run trough a fine screen to do away with the lumps found in some of the best brands. Then the sulphur should be very carefully dampened with a small amount of cold water and properly mixed by pounding down and stirring up after which more water and part of the lime is added, which starts the spray cooking. It can be ready to use in one or one and a half hours.

Mr. Hurst has been able to make the spray, cooking it in this manner, much stronger than any recorded cooked by the old method. The highest record attained by the old way of cooking contained twenty-nine per cent of soluble sulphur, while his cooked in the barrels using 100 pounds of sulphur and 100 pounds of lime, when analyzed by the state chemist, showed 30.8 per cent of soluble sulphur. When the sulphur was not dampened first as spoken of before but was put in dry, after the water was boiling (as people usually have done before this year), even though the batch was cooked for three hours, a great loss was noticeable, as when it was analyzed by the state chemist it was found to contain only twenty-one per cent of soluble sulphur. The sulphur that remained in this mixture undissolved was screened out and saved and weighed and was found to be twenty-five pounds after it was dry. By this it can be seen that from one-fourth to one-third of the sulphur is lost when it is not thoroughly dampened with a small amount of cold water before it reaches any heat or any great quantity of water. This method of cooking the spray only costs one and a quarter cent a gallon. This spray when diluted showed an analysis of three per cent sulphur and two per cent lime, which is plenty strong enough to kill the scale. For this seventy-five pounds of sulphur and 100 pounds of lime are used, which is a saving of fifty pounds of lime from the old formula.

Salt should be used in the mixture, as it gives a chance to get a heavier coating of spray in the trees, and this prevents other insects from working on the trees during the summer, as the salt causes the lime to adhere to the tree.

NOTE—Through an oversight on our part illustrations are left out.—EDITOR.

FIGURE 41—CAR FINEST QUALITY SPITZENBERG APPLES, LOADED 630 BOXES TO THE CAR, READY FOR SHIPMENT TO NEW YORK, SHOWING PROPER BRACING. BY YAKIMA COUNTY HORTICULTURAL UNION

CLEAN ADVERTISING

The readers of "Better Fruit" should patronize the advertisers of "Better Fruit." Our list of advertisers is a clean list from start to finish. It has been so from the first number to the last and will continue to be so. "Better Fruit" is about the only horticultural paper that we know of that does not and will not publish patent medicine, quack doctor, liquor or tobacco, promotion or mining ads. We have turned down hundreds of dollars worth of advertising.

The Advertisers in "Better Fruit"

It has been our aim to solicit and accept only advertisements from firms that have a reliable reputation. Consequently we believe our advertisers are a reliable directory to both the grower and the fruit dealer.

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PARAGRAPH PULPIT

Creed and faith are different. Christ had no creed, else he would have taken pains to teach it. Faith is a power that impels to action. Creeds may be crumbling, but the faith that moves men to noble self-sacrifice and high achievement abides. Faith in God is one thing, belief about God another. Belief makes men dogmatists, faith makes them heroes. Our Unitarian faith is richer for having let in the light of reason. We fear no "Higher Criticism." We welcome truth from every quarter. Truth never destroys anything eternal. Truth is an attribute of God himself.—Adapted from C. T. B. (For free Unitarian literature address 346 Yamhill Street, Portland, Oregon.)

BETTER FRUIT

HOOD RIVER, OREGON

OFFICIAL ORGAN OF
THE NORTHWEST FRUIT GROWERS' ASSOCIATION

A MONTHLY ILLUSTRATED MAGAZINE
PUBLISHED IN THE INTEREST OF UP-TO-DATE
FRUIT GROWING AND MARKETING

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E. H. SHEPARD — EDITOR AND PUBLISHER
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ADVERTISING RATES ON APPLICATION

Entered as second-class matter December 27, 1906, at the postoffice at Hood River, Oregon, under act of Congress of March 3, 1879

BETTER FRUIT takes pleasure in presenting this, the September number, as a special packing edition. "Better Fruit" in 1906 produced the first special packing edition, giving the methods in use in the Northwest, accompanied by illustrations. "Better Fruit" was original in this line of work. In 1907 we produced another packing edition which was a big improvement on the former. This year we believe that the edition will far surpass our two previous numbers, and we sincerely hope that this edition will be a great help to the novice and be of material assistance in the way of improving the pack of almost every grower and association in the Northwest.

These illustrations have been made from photographs, in nearly every instance, that were either taken by us or under our supervision. In order to make this a thorough article, with an illustration covering every feature, we have found it necessary to use a few illustrations which we have used in the past and for which we apologize to our readers, and wish to say in explanation that our reason for doing so was because we could get no better picture of the point we wished to illustrate.

The illustrations that have appeared in "Better Fruit" have been in most instances taken by us or under our supervision, or furnished us as originals upon our request or voluntarily. We have had a great many requests for the use of our cuts, which have cost us several thousand dollars. We have been foolish enough to lend these, in our desire to promote the fruit industry, but have got ourselves in trouble by so doing, because they have been made from photographs illustrating the fruit in one district and we have found they have been used to advertise fruit in some other district. We have therefore been compelled to decline to lend any cuts in future except to an individual or for a publication in the district where the photograph was taken. In previous numbers of "Better Fruit" have appeared illustrations of apricots, peaches and pears that we had taken especially for us. We think when any paper sees fit to have photographs of our illustrations taken and cuts reproduced, that we are entitled to some credit in the matter. We would suggest to publishers who see fit to do this that they give us credit, and we would suggest further in the matter that they be particular to label them correctly. We think it a great joke when a pack of apricots is labeled "A good peach pack," at least it is a good joke on the horticultural editor who makes this mistake.

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THE object of "Better Fruit" is twofold. Firstly, to improve the condition of the fruit industry in every way possible by giving the most advanced and up-to-date methods in reference to cultivation, pruning, spraying, irrigation, thinning, picking, packing and shipping the crop. Above all we wish to help those who are in the business, and we believe further than this we can help every district by assisting to bring people into the district to go into the fruit business. The greater crop a district produces the greater factor it will be in the market, and the larger the crop the more general will become the reputation, which means an increased demand. Furthermore, a great many districts are not growing fruit in sufficient quantities to market in carloads. They need more people to engage in the fruit business so that the acreage will be sufficient to produce carloads. Without carloads people will never get the price they are entitled to. For this reason we have felt justified in devoting some of our space in previous numbers to exploiting work with a view to placing different districts prominently before the public. Of course, such space has crowded out some technical information, but we believe the results have more than justified us in the exploiting work that we have done. It is our intention, however, generally speaking, to limit this line of work. Where exploiting work is done, the amount of space devoted to it, or to any one district in fact, will be somewhat less than in the past and exploiting numbers will be less frequent.

In fact, it will be our aim so far as possible to have some article and some illustrations from every district in the Northwest in each issue. We believe

FIGURE 30 — ANJOU PEARS, PACKED BY JOSEPH A. WILSON, HOOD RIVER, OREGON. FORTY TO THE HALF BOX

Mills Located at Gravel Pit on C. R. & N. Ry.

Baker & Chappell

Goldendale, Washington

Dealers in all kinds of

Planed and Rough Lumber

In Pine and Fir

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The Man of the Hour

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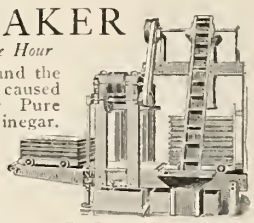

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Of Every Description

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WHEN WRITING ADVERTISERS MENTION BETTER FRUIT

W. F. LARAWAY
DOCTOR OF OPHTHALMOLOGY
EYES TESTED LENSES GROUND
Over 30 Years' Experience
TELESCOPES, FIELD GLASSES
MAGNIFIERS TO EXAMINE SCALE
HOOD RIVER, OREGON
AND GLENWOOD, IOWA

D. McDONALD
HOOD RIVER, OREGON
Headquarters for
FARMING AND ORCHARD
TOOLS
Disc Harrow Extension for Orchard Cultivation a Specialty
When you want any kind of Orchard Tools come to me and get the BEST

Cupid Flour
Has same standing in the Flour Trade that Hood River Apples have in the Fruit Trade. *Made by*
HOOD RIVER MILLING CO.

S. E. Bartmess
UNDERTAKER AND LICENSED EMBALMER
For Oregon and Washington
Furniture, Rugs, Carpets and Building Material
Hood River, Oregon

HILL
MILITARY ACADEMY
A BOARDING and Day School for Boys Manual Training, Military Discipline, College Preparation. Boys of any age admitted at any time.
WRITE FOR ILLUSTRATED CATALOGUE
DR. J. W. HILL
PROPRIETOR AND PRINCIPAL
PORTLAND, OREGON

this will be better and we think it will give greater satisfaction than the plan of devoting a whole lot of space in one issue to an individual district.

Carloads

In previous articles and editorials "Better Fruit" has always advocated a district getting on a carload basis in the shortest possible time. The editor of "Better Fruit" has managed the Hood River Fruit Growers' Unions for a number of years in the past, and this position gave me an insight into the business that no individual grower could well get, and I found that it was absolutely necessary for a district to get results to be able to market in carloads. There are two important reasons for this. Firstly, because in a carload you can ship under refrigeration, so as to arrive always in perfect condition. Secondly, the express rate is so high that very few fruits can stand it and leave a fair profit for the grower. The carload is a necessity for two reasons. Firstly, because you can

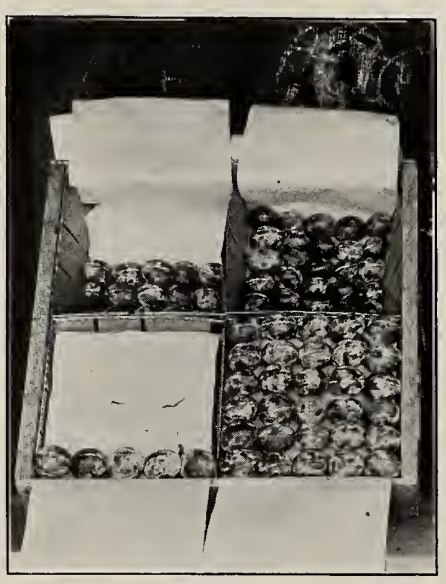

FIGURE 33—FANCY PRUNE PACK, MOSIER, OREGON

ship under refrigeration, and secondly, because the carload rate is usually less than one-half of the express rate. For instance, the express on a box of apples to New York would be about $3.75 and the carload rate 50 cents a box.

The cherry business in the Northwest this season is an object lesson in itself and illustrates the full force of this editorial. Canneries would not pay over three cents a pound for cherries. Many canneries would not pay that price, and some canneries would not buy at all, on account of their inability to secure money at the bank to finance their output. This crowded the green fruit market at express points. By that I mean the cherry market which could be reached by express was practically limited to the territory west of Denver, for the reason that cherries would not ship beyond Denver and arrive in good condition. In fact, Denver even is too far to ship cherries in open express and lay them down in perfect condition. The cherry markets east of Denver were good if districts had been able to move in car lots, and cherry growers would have got good prices. The editor had a conversation with a member of a large New York firm which handled fifteen carloads of cherries from California. Some of these carloads brought between $4,000 and $5,000. The lowest car netted $1,500, which is 5 cents a pound, as a carload contains 20,000 pounds. Some carloads in the New York market netted growers 20 cents a pound. Bings shipped to New York in pony refrigerators sold as high as $6.75 for ten-pound boxes, or 67½ cents a pound. I therefore believe there is big money in the cherry business, and I firmly believe there was big money in it for growers this year if the crop had been handled right, and by that I mean if the growers had got together, formed a combine or an association and had it properly managed and been able to ship under refrigeration to New York and other big cities in that vicinity, they would have netted from 5 cents a pound up to 10 cents, which certainly beats selling them to a cannery at 2½ or 3 cents. The fault has been, no carloads, no management and no associations.

Our Advertising Arrangement

It has always been the aim and object of "Better Fruit" to carry a class of advertising that would be, so to speak, a directory for the fruit grower or for the man intending to engage in the fruit business. Our advertisements have all been confined to advertising that would be interesting and valuable to the fruit grower and the prospective grower, and we have at last found time to arrange our advertising. All commission houses and fruit buying firms will be found together. All real estate and development leagues will be found classified together. All firms dealing in supplies which the fruit grower uses will be together also. A few ads came in too late for classification, and a few ads are of a nature that does not permit of classification under the above heads. These will be found generally in single columns.

We believe this arrangement of advertising will be a great deal more satisfactory to our readers on account of the classification. For instance, if a man in the East is looking for real estate, and the advertisements of the real estate firms are together, he won't miss any of them. If a grower is looking for the address of any firm, or any particular kind of supplies, it will not be necessary for him to look over the entire paper, as all this class of advertising will be found together. For the above reasons we believe it will be more satisfactory to the reader, and we feel quite certain that it will be more satisfactory to the advertiser, because we believe he will get better results; at least, this is our opinion, and with this object in view we have made the arrangement and will give it a thorough test. We hope both our readers and advertisers will be pleased with this arrangement, but if not we would like to hear any criticism to the contrary.

Special Items in the Packing Number

In addition to the splendid articles on packing, there are some splendid technical articles referring to other features of the orchard business. The attention of our readers is called to the splendid article on cover crops, a very important matter in connection with the fruit industry of the Northwest, where with excessive cultivation the soil is apt to become devoid of humus, if proper steps are not taken to prevent it.

Commission Men and Fruit Buyers

Elsewhere in the columns of this edition will be found a list of the Western and Eastern buyers and commission men engaged in the fruit business. This list will certainly be of great importance and value to our fruit growers and associations in the Northwest who are seeking markets.

Stranahan & Clark

DEALERS IN

Commercial Fertilizers
Land Plaster, Lime
Plaster Paris, Cement
Building Plasters

Hood River, Oregon

Stanley-Smith Lumber Co.

WHOLESALE AND RETAIL

LUMBER

Lath, Shingles, Wood, Etc.

Hood River, Oregon

OLDEST LIVERY COMPANY IN THE VALLEY

TRANSFER & LIVERY CO.

Special Attention to Commercial Men, Camping & Fishing Parties

TELEPHONE MAIN 131

HOOD RIVER, OREGON

Ready for Business
With a complete stock of
Fresh and Pure Drugs
Also fine stock of candies

ALL MATERIALS FOR MAKING SPRAY

Nichols Pharmacy

HOOD RIVER, OREGON

Monarch Steel Stump Puller

Pulls stumps seven feet in diameter

Guaranteed 500 horse power

The only steel stump puller factory in the United States making their own steel stump puller castings. The strongest and lightest machine made

Catalogue and discounts, address

ZIMMERMAN STEEL CO.

Lone Tree, Iowa

VEHICLES AND AGRICULTURAL IMPLEMENTS

THE BEST OF ORCHARD AND GARDEN TOOLS A SPECIALTY

J. R. NICKELSEN
HOOD RIVER, OREGON

HEADQUARTERS FOR

CENTURY SPRAY PUMPS

Hose, Nozzles, First-class Plumbing Supplies

C. F. SUMNER

Successor to Norton & Smith

HOOD RIVER, OREGON

Things we are Agents for

KNOX HATS
ALFRED BENJAMIN & CO.'S CLOTHING
DR. JAEGER UNDERWEAR
DR. DEIMEL LINEN MESH UNDERWEAR
DENT'S & FOWNES' GLOVES

BUFFUM & PENDLETON
311 Morrison Street, Portland, Oregon

A Trip to the Coast

Is incomplete without a ride on the

Mt. Hood Railroad

By Mountain Streams, Apple Orchards Virgin Forests and Snow Capped Peaks

Connects with O. R. & N. at Hood River, Oregon

SLOCOM'S BOOK STORE

Office Supplies
Stationery

Ledgers, Journals, Time Books
Memorandum Books
Rubber Stamps

Souvenir Postals *Picture Frames*

St. Helens Hall

Portland, Oregon

A GIRLS' SCHOOL OF THE HIGHEST CLASS

CORPS OF TEACHERS, LOCATION, BUILDING, EQUIPMENT THE BEST

Send For Catalogue

The PARIS FAIR

Hood River's Largest and Best Store

DRY GOODS
SHOES, CLOTHING

We are offering some extra specials in our Clothing Department. Ask to see them

Try a pair of American Lady $3 & $3.50 Shoes or American Gentlemen $3.50 & $4

For Bargains in the Famous

WHITE SALMON VALLEY

GO TO **R. FIELD & CO.**

R. FIELD, *Manager*

Pioneer Real Estate Dealers

WHITE SALMON, WASHINGTON

Have for sale all kinds of property, including fruit, dairy, timber and city property. Low prices and easy terms. All property guaranteed as represented. We can supply your every want. See our list before buying. We can save you money

LESLIE BUTLER, President
J. N. TEAL, Vice President
TRUMAN BUTLER, Cashier

Established 1900
Incorporated 1905

Butler Banking Company

HOOD RIVER, OREGON

Capital Fully Paid $50,000 Surplus and Profits are $20,000

We give special attention to GOOD FARM LOANS

If you have money to loan we will find you good Real Estate security or if you want to borrow we can place your application in good hands and we make no charge for this service

LADD & TILTON BANK

ESTABLISHED 1859

PORTLAND, OREGON

Capital Fully Paid	$1,000,000.00
Surplus and Undivided Profits	$400,000

Officers:

W. M. Ladd, *President*
Edward Cookingham, *Vice President*
W. H. Dunckley, *Cashier*
R. S. Howard, Jr., *Assistant Cashier*
J. W. Ladd, *Assistant Cashier*
Walter M. Cook, *Assistant Cashier*

INTEREST PAID ON TIME DEPOSITS AND SAVINGS ACCOUNTS

Accounts of banks, firms, corporations and individuals solicited. We are prepared to furnish depositors every facility consistent with good banking

CHAS. G. PRATT, *President*
R. W. PRATT, *Cashier*
J. H. OSBORNE, *Vice President*
M. M. HILL
WILSON FIKE
C. H. STRANAHAN

Hood River Banking & Trust Co.

HOOD RIVER, OREGON

We Own and Occupy the Finest Equipped and Most Modern Bank in Wasco County

A General Banking and Trust Business Transacted
Safe Deposit Boxes Interest paid on Time and Savings Deposits
Make Our Bank Your Headquarters When in Hood River

Correspondence Invited Your Patronage Solicited

CAPITAL $50,000 SURPLUS $15,000

FIRST NATIONAL BANK

HOOD RIVER, OREGON

F. S. STANLEY, *President*
E. L. SMITH, *Vice President*
E. O. BLANCHAR, *Cashier*
V. C. BROCK, *Assistant Cashier*

ASSETS OVER $325,000

Savings Bank in connection

FIRST NATIONAL BANK

PORTLAND, OREGON

CAPITAL AND SURPLUS
$1,500,000.00

No interest paid on accounts

A. L. MILLS . . . . *President*
J. W. NEWKIRK . . . *Cashier*
W. C. ALVORD . . *Asst. Cashier*
B. F. STEVENS . *2d Asst. Cashier*

FRUIT GROWERS ASSOCIATIONS AND UNIONS FROM DIFFERENT SECTIONS OF THE COUNTRY

WE PUBLISH free in this column the name of any fruit growers organization or horticultural society, with the name of their secretary or manager. Secretaries and managers are requested to furnish particulars if omitted, for future publication.

Oregon

Lane County Fruit and Vegetable Growers' Association, Eugene.
Medford Fruit Growers Union—Medford.
Ashland Fruit and Produce Association.
Grants Pass Fruit Growers Union—Chas. Meserve, Secretary, Grants Pass.
Hood River Fruit Growers Union—E. H. Shepard, Secretary and Manager, Hood River.
Hood River Apple Growers Union—H. M. Huxley, Manager, Hood River.
Grande Ronde Valley Fruit Growers Union, La Grande, Oregon—E. Z. Carbine, Secretary.
Milton Fruit Growers Union, Milton—W. C. Hopson, Secretary.
Douglas County Fruit Growers' Association, Roseburg.
Willamette Valley Prune Association, Salem, Oregon. H. S. Gile, Secretary.
Willamette Valley Apple Growers' Association.

Washington

Kennewick Fruit Growers Association — W. S. Jenkins, Manager, Kennewick.
Wenatchee Fruit Growers Union—J. B. Olinger, Manager, Wenatchee.
Puyallup and Sumner Fruit Growers Association —W. H. Paulhamus, Manager, Puyallup.
Vashon Island Fruit Growers Association—C. J. Prior, Secretary, Vashon.
Fruit Growers Association—Shelton.
Spokane Fruit and Vegetable Growers Association —Spokane.
White Salmon Fruit Growers' Union—White Salmon.
Rockford Fruit Growers' Association—Rockford.

Idaho

Southern Idaho Fruit Shippers Association—C. J. Sincel, Secretary, Boise.
New Plymouth Fruit Growers Association—A. R. Ingalls, Representative, New Plymouth.
Payette Valley Apple Growers Union—J. A. Bower, President, Payette.
Thurston County Fruit Growers Union—Fred W. Lewis, Secretary, Tumwater.
Bay Island Fruit Growers Association — H. McGavick, Manager, Tacoma.
Whatcom County Fruit Growers Association — J. H. Kirkpatrick, President, Curtis.
Yakima Valley Fruit and Produce Growers Association, Granger.
Buckley Fruit Growers Association—J. B. Frost, President, Buckley.
Lewis River Fruit Growers Union, Woodland.
Okanogan Fruit Growers Association, Okanogan—W. E. Kirkpatrick, President; Jack Evans, Secretary.
Mason County Fruit and Produce Union, Shelton —A. A. Linton, President; S. Schumaker, Secretary.

Utah

Syracuse Horticultural Society, Syracuse—W. H. Miller, President; Wm. Wilcox, Secretary.

Colorado Fruit Associations

San Juan Fruit and Produce Growers Association, Durango, Colorado, and Farmington, New Mexico—J. M. Kingsley, Manager.
Fremont County Fruit Growers Association, Canon City—Geo. Sailey, Manager.
Rocky Ford Melon Growers Association — A. C. Sloan, Secretary, Rocky Ford.
Plateau and Debeque Fruit, Honey and Produce Association, Debeque—H. A. Stroud, Manager.
Montrose Warehouse (shipper of fruit)—Robert Halley, Manager, Montrose.
Surface Creek Fruit Growers Association, Austin.
Longmont Produce Exchange—R. D. Jenkins, Manager, Longmont.
Manzanola Fruit Association—Ed McClain, Secretary, Manzanola.
Delta County Fruit Growers Association — Geo. Conklin, Manager, Delta.
Boulder County Fruit Growers Association—E. T. Carr, Manager, Boulder.
Fort Collins Beet Growers Association—Chas. R. Evans, Manager, Fort Collins.
La Junta Melon and Produce Company—J. O. Wood, Secretary, La Junta.
Rifle Fruit and Produce Association, Rifle.
North Fork Fruit Growers Association, Paonia—W. H. Garvin, Manager.
Fruita Fruit and Produce Association—E. J. Dalton, Manager, Fruita.
Grand Junction Fruit Growers Association, Clifton.
Palisade, Grand Junction—J. F. Moore, Manager.
Palisade Fruit Growers Association—Geo. Scroggins, Manager, Palisade.
Independent Fruit Growers Association — Grand Junction—Ferbrache, Manager.
Peach Growers Association, Palisade.

Canada

British Columbia Fruit Growers Association—W. J. Brandrith, Secretary, Ladner, British Columbia.
Georgian Bay Fruit Growers Association—J. G. Mitchell, Secretary, Thornbury, Ontario.
Ontario Fruit Growers Association—P. W. Hodgetts, Secretary, Toronto, Ontario.
Quebec Fruit Growers Association — Dr. W. H. Wood, St. Johns, Quebec.
Nova Scotia Fruit Growers Association—S. C. Parker, Secretary, Berwick, Nova Scotia.
Prince Edward Island Fruit Growers Association—A. E. Dewar, Secretary, Charlottetown, Prince Edward Island.

SIZES OF FRUIT BOXES

CHERRY BOX

Ends—2⅜x9x5⅝ thick.
Sides—2⅜x19¾x⅜ thick.
Top and bottom—9x19¾x¼ thick.

STANDARD APPLE BOX

Ends—10½x11½x⅞ thick.
Sides—10½x19¾x⅜ thick.
Top and bottom—5½x19¾x⅜ thick.

SPECIAL APPLE BOX

Ends—10x11x21x¾ thick.
Sides—10x21¾x⅜ thick.
Top and bottom—5x21¾x⅜ thick.

PEAR BOX

Ends—8½x11½x¾ thick.
Sides—8½x19¾x¾ thick.
Top and bottom—5½x19¾.

PRUNE BOX

Ends—4⅝x16x¾ thick.
Sides—4x17½x⅜ thick.
Top—8x17½.
Bottom—5½x17½.

WANTED
APPLES
Write us what you have to offer; will have our man call on you
C. C. Clemons & Company
128 Grand Avenue Kansas City, Missouri

ESTABLISHED 1878
D. CROSSLEY & SONS
200 to 204 Franklin Street, New York
Apples for Export
California, Oregon and Florida Fruits
LIVERPOOL NEW YORK BOSTON GLASGOW

We make a specialty of
Western Fruits
APPLES, PEACHES, PLUMS AND PEARS
The Callender-Vanderhoof Co.
Minneapolis, Minnesota

J. Grainger & Co.
LINCOLN, NEBRASKA
Largest Fruit Jobbing Concern in Nebraska
Are the heaviest handlers of
Apples
In the West. They are in the market for large quantities barrel and box stock for storage purposes and immediate requirements. Growers and shippers in all parts of the country are requested to get in touch with us. Write now stating what you will likely have to offer.
REFERENCES
First National Bank, Lincoln, Nebraska.
Corn Exchange National Bank, Chicago.
Phœnix National Bank, Wall Street, New York.
Any responsible wholesale house in the fruit trade.

NEW ORLEANS
The Acknowledged Fancy Fruit House of New Orleans
IMPORTERS JOBBERS
APPEL & UJFFY
Wholesale Commission
All Fruits in Season
STORAGE FOR FIFTY CARS
The Largest Exclusive Fruit Concern in the South

Okanogan NURSERIES

We have not another fruit tree to sell this season. We have however, a fine line of roses, shrubs, shade trees, berries and grapes

OMAK, WASHINGTON
OKANOGAN COUNTY

COMMERCIAL SPRAYING

Nets from $5.00 to $50.00 per day. We have a special plan for assisting one reliable man in each county to build up a profitable business

Write for details of our plan, stating your experience and naming two references

American Horticultural Distributing Co.
MARTINSBURG, WEST VIRGINIA

420 Acres Devoted to Nursery Purposes

THE WOODBURN NURSERIES

Established 1863 by J. H. Settlemier

Grower of Choice
Nursery Stock

F. W. SETTLEMIER
WOODBURN, OREGON

ALL KINDS OF SEEDS

Best of Quality

McREYNOLDS & Co.
HOOD RIVER, OREGON

True to Name Nursery Offers to Planters

For fall, 1908, a choice stock of apple, cherry, pear and peach, including all the leading varieties adapted to this locality, with special reference to Yellow Newtown and Spitzenberg Apples, Lambert, Bing and Royal Ann Cherries, Buerre D'Anjou and Comice Pears, Foster, Elberta, Salway, Early and Late Crawford Peaches. All buds and scions selected from the best bearing orchards in Hood River. Price list on application

H. S. GALLIGAN
Phone Home 2002K Hood River, Oregon

PACIFIC COAST ASSOCIATION OF NURSERYMEN

Armstrong, John S., Ontario, California.
Atwood, C. J., Toppenish, Washington.
Brownell, A., Portland, Oregon.
Bouillard, F. X., Chico, California.
Brooks & Son, Carlton, Oregon.
Bonnell, J. J., Seattle, Washington.
Baristow, J. W., Hanford, California.
Better Fruit, Hood River, Oregon.
Benjamin Chase Co., Derry, N. H.
Coates, Leonard, Morgan Hill, California
California Rose Co., Los Angeles, California.
Crocker, L. L., Loomis, California.
California Nursery Co., Niles, California.
California Cultivator, Los Angeles, California.
Charles A. Chambers, Fresno, California.
Chico Nursery, Chico, California.
Cody, L. R., Saratoga, California.
DeHart, F. R. E., Kelowna, B. C.
Eckert, A., Detroit, Washington.
Eachus, R. P., Lakeport, California.
Freeborough, Montavilla, Oregon.
Foster, A. T., Dixon, California.
Galligan, H. S., Hood River, Oregon.
Gibbs, George, Clearbrook, Washington.
Griffith, Tom, Penryn, California.
Gill, E., West Berkeley, California.
Galloway & Harmon, Heddsburg, California.
Giffin, O. F., Pomona, California.
Hartley, C. P., Caldwell, Idaho.
Harvey, N. B., Milwaukie, Oregon.
Henry, M. J., Vancouver, B. C.
Harness, Dix & Co., Roy, Utah.
Howard, C. W., Hemet, California.
Holaday, A., Scappoose, Oregon.
Heikes, W. F., Huntsville, Alabama.
Hedberg, T. E., Lindsay, California.
Harlan, T. E., Chico, California.
Ingalls, W. D., North Yakima, Washington.
Jones, Rolla A., R. F. D., Hillyard, Washington.
J. Horace McFarland Co., Harrisburg, Pennsylvania.
Kelly, Wm., Imperial, California.
Kruckeberg, H. W., Los Angeles, California.
Lansing, C. F., Salem, Oregon.
Lewis, H. A., Russellville, Oregon.
Lingham, A., Puyallup, Washington.
Layritz, Richard, Victoria, B. C.
Littooy, J. F., Mountain Home, Idaho.
McDonald, M., Salem, Oregon.
McGill, A., Salem, Oregon.
Miller, S. A., Milton, Oregon.
Miller, G. W., Milton, Oregon.
Mills, James, Riverside, California.
McDonald, A. W., Toppenish, Washington.
Malmo, C., Seattle, Washington.
McCormick, C., Portage, Washington.
Marshall, S. W. & Son, Fresno, California.
Maxwell, Jno., Napa, California.
Morse, C. C. & Co., San Francisco, California.
McClain, W. S., Sunnyside, Washington.
McHutchinson & Co., New York, N. Y.
Nelson, Fred, Fowler, California.
Oregon Spray & Gas Co., Portland, Oregon.
Oregon Agriculturist and Rural Northwest, Portland, Oregon.
Power, F. W., Chico, California.
Pilkington, J. B., Portland, Oregon.
Pioneer Nursery Co., Salt Lake, Utah.
Peaslee, G. W. R., Clarkston, Washington.
Pacific Homestead, Salem, Oregon.
Park Nursery Co., Pasadena, California.
Peirce, B. F., Albany, Oregon.
Remlinger, L., Vancouver, Washington.
Remlinger, M., Vancouver, Washington.
Rawson, C. F., Hood River, Oregon.
Roeding, George C., Fresno, California.
Ruehl-Wheeler Nursery, San Jose, California.
Silva & Bergtholdt Co., New Castle, California.
Stewart, J. A., Christopher, Washington.
Settlemier, F. W., Woodburn, Oregon.
Stanton, F. H., Hood River, Oregon.
Sandahl, C. N., Seattle, Washington.
Smith, E. P., Gresham, Oregon.
Sibson, W. S., Portland, Oregon.
Sluman & Son, Mount Tabor, Oregon.
Spalding, T. K., Sunnyside, Washington.
Sanders, G. W., Davisville, California.
Scheidecker, Sebastopol, California.
Stratton, W. A. T., Petaluma, California.
Smith, O. F., Blackfoot, Idaho.
Shadow, J. W., Winchester, Tennessee.
Southern Nursery Co., Winchester, Tennessee.
Tonneson, C. A., Tacoma, Washington.
Tillinghast, A. G., La Conner, Washington.
Taft, S. H., Sawtelle, California.
Teague, R. M., San Dimas, California.
Thomas, Jacob & Brother, Visalia, California.
True, T. J., Sebastopol, California.
Tosetti, G., Toluca, California.
Thompson, C. D., Hood River, Oregon.
Tyler Bros., Kimberly, Idaho.
Utah Nursery Co., Salt Lake, Utah.
Vredenberg & Co., Rochester, N. Y.
Wagner, J. B., Pasadena, California.
Weber, R. H., The Dalles, Oregon.
Wright Nursery Co., Cashmere, Washington.
Wiggins, F. A. Toppenish, Washington.
Wightman, E. W., Chico, California.
Wheeler, W. F., Oakesdale, California.
Young, C. N., Tacoma, Washington.

◈ ◈ ◈

Wanted—A position as horticulturist with some company; am a college graduate in horticulture and have also had several years' practical work. Address E. E., care "Better Fruit."

Wanted—The Evergreen Fruit Growers' Association desires the services of an expert packing superintendent for the coming season; liberal salary to the right man. Address R. D. 8, Spokane, Wash.

Milton Nursery Co.

MILTON, OREGON

Specialties for 1908-9—Pear and Cherry Trees Two-year-old Cutleaf Weeping Birch, Maples, Elms, Snowballs, and a good stock of all other shades and ornamentals listed in catalogue. *Send for it.*

The TIM KELLY NURSERIES

A Large Choice Stock of Apple, Peach and Pear, in all the Leading Varieties for Fall Delivery. Every Tree Grown in my own nurseries and under my own personal supervision

Tim Kelly, *The Nurseryman*

SALES OFFICE
118 YAKIMA AVENUE EAST, NORTH YAKIMA

NURSERIES AND BUSINESS OFFICE
WAPATO, WASHINGTON

A Reputation to Sustain

VINELAND NURSERIES COMPANY

Propagators of

Reliable Nursery Stock

All Stock Budded From Bearing Trees
Fruit and Ornamental

CLARKSTON, WASHINGTON

The Sunnyside Nursery Company

INCORPORATED

LARGE AND COMPLETE LINE OF NURSERY STOCK

We will have ready for the market for fall or spring trade 200,000 each of Spitzenberg, Winesap and Yellow Newtown. In fact, about 1,000,000 trees of staples. We have the largest stock of Winter Banana apples in the West—stock from a famous orchard in Wenatchee. This is the coming commercial apple. We can handle your order, no matter what the size. Write to us at Sunnyside, Washington, for prices. Nurseries at Sunnyside, Grandview and White Bluffs.

"THE OLD RELIABLE"

Albany Nurseries

INCORPORATED

ALBANY, OREGON

We have a complete stock for the coming season. Send in your orders early

Catalogue Free *Salesmen Wanted*

Yakima Valley Nursery

Incorporated $60,000 Fully Paid

LARGEST STOCK OF

FRUIT TREES

in the Pacific Northwest. Special prices for large planters. *Salesmen Wanted Everywhere*

W. D. INGALLS, *President and Manager*

NORTH YAKIMA, WASHINGTON

Oldest Nursery in Southeastern Idaho

BLACKFOOT NURSERY

O. F. SMITH, Proprietor Established 1897

HARDY FRUITS FOR COLD CLIMATES OUR SPECIALTY

BLACKFOOT, IDAHO

Our Trees are Cheap

Because they are clean, thrifty, and true to label. Those that are not, are dear at any price

WRIGHT NURSERY CO.

R. D. No. 1, CASHMERE, WASHINGTON

PHONES:

D. W. Wright 54 A. A. Wright 502

Southern Oregon NURSERY

Twenty-four Years' Experience

Notwithstanding the superior quality, trees are offered at prices no higher than those charged for inferior stock. Everything is sold direct, we have no Agents.

OAKLAND, OREGON

WHAT'S THE USE OF WASTING YOUR TIME

Don't try to grow hay on land that is worth $500 per acre. You only get about $30 worth of hay per acre. That doesn't pay you 8 per cent of what you can get any time. But a good orchard will pay you from $250 to $1,000 per acre, one year with another. I am selling trees everywhere and nothing but home grown stock. Prompt delivery and first class. Satisfaction guaranteed. Nursery in the Selah Valley at Parker Siding. Write for price list.

SELAH VALLEY NURSERIES

R. No. 2, SELAH, WASHINGTON

Phone 219X4 C. B. Wood, Prop.

The Everbest Nursery Company

Incorporated

F. C. NIELSEN, Manager

We have for the coming season a very fine line of Choice Nursery Stock. Our stock is all budded or grafted from **Wenatchee Bearing Trees.** An exceedingly large line of choice Sweet Cherries. Write for catalogue.

WENATCHEE, WASHINGTON

LAYRITZ NURSERY

Victoria, British Columbia

Headquarters for choice nursery stock in British Columbia. Apple, pear, cherry, plum and peach trees and small fruits, also ornamental trees, shrubs, roses, evergreens, etc. Largest and best assorted stock in British Columbia.

PRICES ON APPLICATION

STRAWBERRY PLANTS

That pay to plant are the kind we grow

We have for this season the largest acreage of plants we ever grew. We have had unusually favorable weather and never grew such a fine lot of strawberry plants. Our supply consists of at least ten million plants of all the leading varieties both old and new. We have shipped a large number of plants the past two seasons to the Northwestern States that have always given satisfaction. We are prepared to fill orders for any amount. We also grow Raspberry, Blackberry, Dewberry and all other small fruit plants, the quality of which is unsurpassed. If you want plants now, write for prices, stating your wants. Our new catalog will be ready to mail about January 1. It is FREE, *write for a copy now.*

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Consider THE Quality

A good tree at a fair price is cheaper than a tree of questionable worth as a gift. The cost of a tree is not measured by the few cents you first pay for it; the time spent in bringing it into bearing and the interest on your land are much larger factors.

The trees we grow are superior in every respect. Our nursery is in the heart of the Yakima Reservation, isolated from old orchards or forests, hence free from pest or contamination. This, with the exceedingly fertile virgin soil and fine climate, enables us to put on the market trees not only clean and healthy, but possessing a splendid root system that brings them into early bearing, the prime essential for the commercial orchardist.

If first-class quality, prompt service, courteous treatment and a careful, systematic handling of your orders are worth considering, we want your business.

Washington Nursery Company

TOPPENISH, WASHINGTON

CHRISTOPHER NURSERIES

Send your order for the proposed planting at once, for fruit suited to any market is the kind our trees produce, because we take pains in propagating and our stock is on vigorous two and three-year-old roots. Catalogue upon application. JOHN A. STEWART, Christopher, Washington.

TOKAYS TOKAYS TOKAYS

One-half million Tokay Grape vines and large stock of other varieties. Also Logan, Phenomenal, Himalaya Giant, Mammoth Blackberries, Crimson Winter Rhubarb and General Nursery Stock. *Agents wanted* CHICO NURSERY CO., Chico, Cal.

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We can supply planters and dealers with very choice peach trees of all the leading varieties, including Crawfords, Elbertas, Clings, Muirs, etc. We also have very fine Lambert, Bing, Royal Ann and other kinds of cherry trees. Also a fine stock of apple trees of leading commercial varieties. Get our prices on fine large poplars and cut-leaf birch. Any quantity.

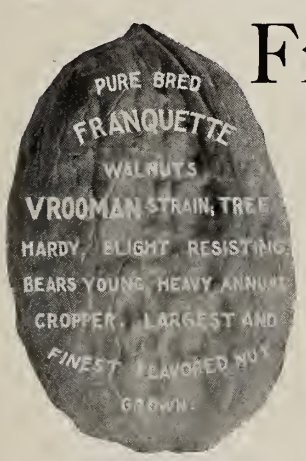
Write for Catalogue and Price List *C. F. LANSING, Salem, Oregon*

FRUIT GROWERS, YOUR ATTENTION!

Royal Ann, Bing and Lambert cherry trees; Spitzenberg and Newtown apple trees; Bartlett, Anjou and Comice pears, and other varieties of fruit trees

A. HOLODAY MONTE VISTA NURSERY SCAPPOOSE, OREGON

THE VROOMAN PURE STRAIN Franquette Walnut



The kind that blooms late, is a heavy and regular bearer, with a large, well filled, medium thin shelled, exceptionally fine flavored nut. Is the leading Walnut on the market today and is planted more extensively than any other variety. Don't be fooled by something "just as good." Investigate thoroughly before you buy —it will stand the test. FREE descriptive literature sent on request.

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Can you sell goods? If so we need you. Complete outfit free; cash weekly. *Write for choice of territory*

CAPITAL CITY NURSERY COMPANY
SALEM, OREGON

1,000,000 Clark Seedling Strawberry Plants

For this Fall and next Spring Delivery

ADDRESS
A. WHITEHEAD
HOOD RIVER, OREGON

WHOLESALE RETAIL

THE DALLES NURSERIES

R. H. WEBER, *Proprietor*
THE DALLES, OREGON

Grower and Dealer in FRUIT, SHADE AND ORNAMENTAL

TREES

GRAPE VINES & SMALL FRUITS
EVERGREENS, ROSES & SHRUBBERY

REMEMBER—OUR TREES ARE GROWN STRICTLY WITHOUT IRRIGATION

Hood River Nurseries

Have for the coming season a very complete line of

NURSERY STOCK

Newtown & Spitzenberg propagated from selected bearing trees. Make no mistake but start your orchard right. Plant generation trees. Hood River (Clark Seedling) strawberry plants in quantities to suit.

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Rawson & Stanton, Hood River, Oregon

Ideal Fruit & Nursery Co.

We have for fall and spring delivery a full line of absolutely true to name and free from all pests all the leading varieties of

Apples, Pears, Cherries, Prunes, Plums, & Small Fruits of all Kinds

We invite inspection at any time
Prices furnished on application

Guignard & Rosiger, Hood River, Oregon

When you get to Hood River stop at the

MT. HOOD HOTEL

Trains stop directly in front of Hotel. ¶ Bus meets all boats

Automobile Service Daily for Cloud Cap Inn During Months of July, August and September

GET THE
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FOR YOUR FRUIT BY PUTTING THEM UP ATTRACTIVELY, TO DO THIS
YOU NEED GOOD
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WE MAKE THEM
WE CARRY IN STOCK LABELS FOR APPLE-PRUNE & CHERRY BOXES BERRY CRATES, ETC., ETC.
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For Dormant Trees
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FUNGICIDE
For Foliage

Interesting literature, showing the revolution in spraying methods where Target Brand has been used for three seasons, mailed on request.

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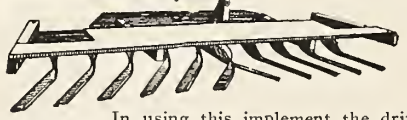
PRICE $16 F. O. B.

Is the one to use in all orchards. It is 8½ feet wide, very easy to guide, has a fender which prevents striking the tree with knife. No hoeing of trees where used. Two horses in it in orchard, for destroying fern, pink, sorrel, oats, briars and Canada thistle it has no equal.



In using this implement the driver will stand in center of board, over knives, and to guide it will step to right or left, as occasion requires, and if anything should catch or gather on the knives the driver will step forward on draft board, tilt the handle forward, raising the knives, so that anything that had gathered on them may free itself. Keep all of the burs tightened and should any of the knives get bent out of shape force them back to place without removing them from the frame. Manufactured by

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When you come to Portland take THE CORNELIUS omnibus and go to

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Corner Park and Alder Streets, Portland's newest and most up-to-date hotel. It is sometimes difficult to make a change in hotels. However, give "THE CORNELIUS" a trial on your next visit to Portland and be happy. European plan. Rates reasonable.

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Offers collegiate courses in Agriculture, including Agronomy, Horticulture, Animal Husbandry, Dairy Husbandry, etc.; Forestry, Domestic Science and Art, Civil, Electrical, Mechanical and Mining Engineering, Commerce, Pharmacy.

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Strong faculty, modern equipment, free tuition; opens September 25.

Illustrated catalogue with full information on application to the Registrar, free.

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Are the best for fruit boxes. They are imitated because we advertise them and our product has an established reputation. The imitator has *no reputation* to sustain. *We have.* You never see an advertisement of the imitations. They are *always offered on our reputation.* It stands to reason that our nails are the best, otherwise we could not afford to advertise them. When you ask for PEARSON'S nails see that you get them. *Don't be imposed upon.*

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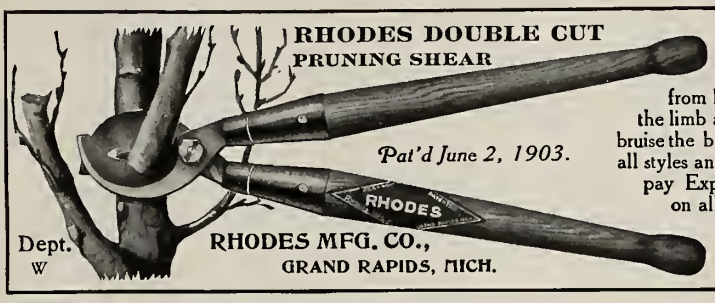

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If so, you are not justified in buying until you have seen our catalogue. Write us today for delivered price on your requirements

Grays Harbor Commercial Co.

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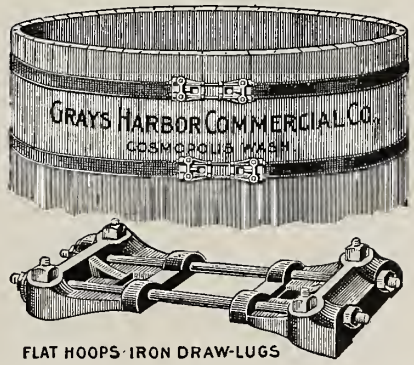

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TELLS ALL ABOUT OUR

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Water will run up hill

WHEN A

Columbia Ram

Is placed at creek or spring. Most economical pumping device in existence. No cost of operation. No attendant required. Catalogs and estimates furnished free.

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Lodged Grain Means Lost Profits

The wheat grows up, heads out, and then falls down—so much grain *not* harvested—so much labor lost and capital wasted—just so much more profit you might have had. The trouble was—unbalanced fertilizer, with too little Potash.

Potash makes strong stalks and prevents lodging.

Use a *complete* fertilizer, with at least 6 per cent. of Potash, but if your dealer does not keep it, then add 15 pounds of Muriate of Potash to each 100 pounds of fertilizer.

Send for our pamphlets containing facts about soil, crops, manures and fertilizers. Mailed FREE.

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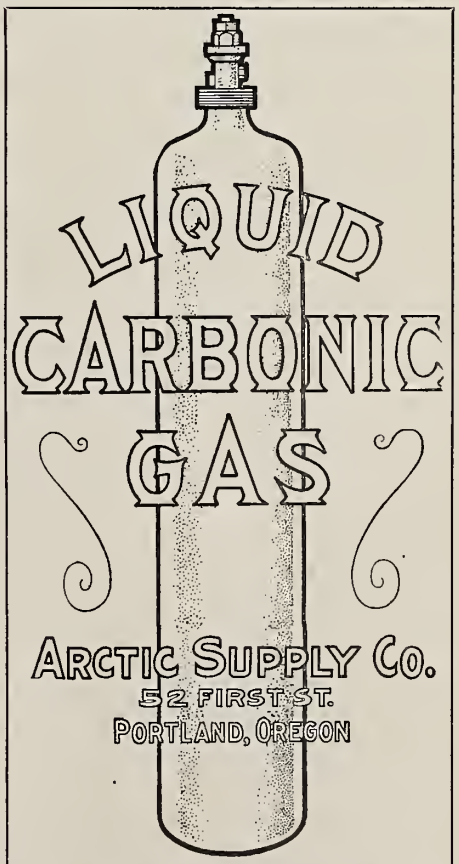

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Good Quality
Prompt Shipments
Low Prices

Send us your orders for apple, peach, pear, prune and orchard boxes. Grape crates, tin top baskets, etc.

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BERRY BOXES CRATES, ETC.

Write for Prices *Please State Quantities and Sizes Wanted*

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Electrical Supplies and Fixtures, Scientific Wiring of Buildings a Specialty. Underwriters' Rules apply to all work in Hood River and surrounding districts.

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Manufacturers of all kinds of boxes, fruit boxes and berry crates. *Car lots a specialty*

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Factory: THE DALLES, OREGON

ORDER YOUR

Fruit and Berry

BOXES

From

UNION BOX & LUMBER CO.

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Fruit and Produce

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BRIGHT, LIGHT FRUIT BOXES FROM THE FAMOUS KLICKITAT PINE

Our new plant can fill your orders promptly and satisfactorily and save you money. Send your specifications and ask for prices

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Where the color and keeping qualities of the fruits raised cannot be excelled anywhere in the world. **GOVERNMENT IRRIGATION** is the best irrigation system possible. We have a large list of excess lands, under the Government project, that must be sold, and the prices and terms are in reach of the man of moderate means. **OKANOGAN FRUITS** won a gold medal at the Lewis and Clark Exposition held at Portland, Oregon, in 1905. We also took nineteen prizes out of twenty-three varieties of fruit exhibited at Spokane Interstate Fair in 1907. For particulars and free booklet address

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Who wish to produce an apple which will keep two months longer than apples grown along the Columbia River, come to Baker City and investigate the famous Sunnyslope bench lands. Write for particulars to the

BAKER IRRIGATION CO.

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Buy and Try

WHITE RIVER FLOUR

MAKES

WHITER, LIGHTER BREAD

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Our facilities for the prompt handling of out-of-town orders, together with the high-class service we render, makes this a good place to buy Printing. *Better Fruit* is designed and printed in our establishment. Long Distance Telephone Main 165.

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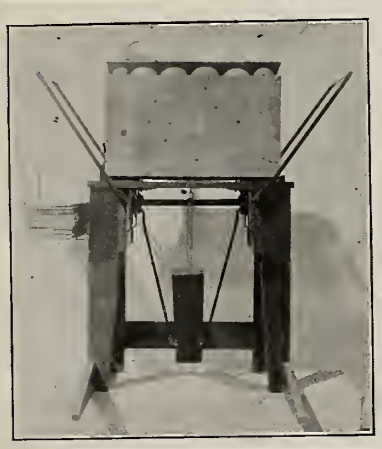

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GOYETT AUTOMATIC APPLE BOX PRESS

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The fastest and only automatic apple box press made. Will pay for itself in one season.

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Retail price $10, freight paid

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TWENTY-FOUR HOUR SERVICE

City Water Works System for Domestic and Municipal Use. Are prepared to furnish 3000 Horse Power, either Electric or Water, at Reasonable Rates

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Niagara Lime and Sulphur Solution

For San Jose Scale and all pests for which Lime and Sulphur has been found a remedy. Niagara is the **only spray made which is tested and has that test marked on every barrel.** It is a perfectly made, clear, highly concentrated liquid, capable of being diluted with eleven times its quantity of water for San Jose Scale. The following are a few of the many who are using or handling Niagara because it is the best:

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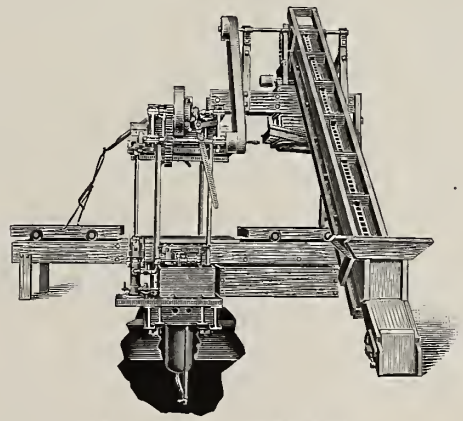
Hood River Spray Mfg. Co.

Hood River, Oregon

Under arrangement with the OREGON SPRAY & GAS CO., Originators

LARGE PROFITS *in* CIDER



CAPACITY 10 TO 400 BARRELS PER DAY

THE ORIGINAL MT. GILEAD

HYDRAULIC PRESS

HAND OR POWER. Made in Ten sizes

Produces more cider from less apples and is a bigger money maker than any other Press. *Fully Guaranteed.* Write for catalog or any information desired. We can show you how $1500.00 clean profit can be made.

The Hydraulic Press Mfg. Co.

Largest manufacturers of Cider Presses in the World

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We make a special feature of apple and pear land

Southern Oregon Investment Co.

Harry Silver J. S. Bailey

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Our Newtown Pippins are fine quality, keep better, and bring the highest price. Pear orchard net yield $500 per acre. Land finely located $30 per acre and upward.

GORE PEAR ORCHARD

COME TO KENNEWICK VALLEY

Where early strawberries net the grower an average of $3.25 per crate.

Where there is an abundance of water from a gravity flow ditch.

Where land improved and raw can be bought on easy terms.

Where the shipping facilities are second to none in the entire Northwest.

Where you can put your children in the best schools in the State.

Where everybody prides themselves on their pretty homes.

For a beautiful colored booklet telling all about the wonderful resources and possibilities of Kennewick Valley, *write to*

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LANDS OWNED BY PRIVATE INDIVIDUALS AND LAND COMPANIES

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Write to

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Chenowith Cove Tracts for Sale

Fruit and vegetable land on the line of the O. R. & N. R. R. within two and one-half miles of

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a city of five thousand population. These tracts are a part of my Chenowith Cove Farm, which is said to be one of the best farms in Wasco County. The ground is the earliest in the State, producing fruits and vegetables of many kinds for the earliest market and best prices. Prices and terms upon application to

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Cashier
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One Thousand Miles Nearer Eastern Markets

Than Pacific Coast Points

No floods, no cyclones, no lightning

Climate unexcelled. Two hundred fifty thousand fruit trees planted this spring. Bearing trees loaded with beautiful fruit this frosty year. Peaches, pears, apples, cherries, apricots and other fruits grow in profusion. Unlimited water all year; low altitude; Eastern people; excellent transportation. Melons shipped in car lots that top the market. Opportunities galore. We invite comparison. All inquiries truthfully answered. Secretary Commercial Club, Green River, Utah

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Oregon needs people—settlers—honest farmers, mechanics, merchants, clerks, people with brains, strong hands and a willing heart—capital or no capital.

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are sending *tons* of Oregon literature to the east for distribution through every available agency. Will you not help the good work of building Oregon by sending us the names and addresses of your friends who are likely to be interested in this state? We will be glad to bear the expense of sending them complete information about Oregon and its resources.

COLONIST TICKETS

Will be on sale during

September and October

from the east to all points in Oregon

The fare from a few principal cities is:

Denver	$30.00	Louisville	$41.70
Omaha	30.00	Cincinnati	42.20
Kansas City	30.00	Cleveland	44.75
St. Louis	35.50	New York	55.00
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Tickets Can Be Prepaid

If you want to bring a friend or relative to Oregon, deposit the proper amount with any of our agents. The ticket will then be furnished by telegraph.

WM. McMURRAY

General Passenger Agent — *PORTLAND, OREGON*

THE DALLES, OREGON

ANNUAL OUTPUT

Choice Apples, Plums, Peaches, Apricots and Strawberries shipped in car lots.
40 cars Melons.
40 cars Prunes.
10,000 cases Cherries.
40,000 Cherry Trees planted during the last two years.
Two canneries in operation.
450,000 barrels Flour.
3,000,000 pounds of Wool scoured.
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Early vegetables of all kinds put on the Portland market one to two weeks ahead of any other Oregon points

The county seat of Wasco County, is a thriving wide-awake city of 5000 inhabitants, located on the Columbia River with two through line railroads, one on either side of the river. The city boasts of its fine streets and beautiful homes and is proud of its great variety of resources. 3000 horse-power electric plant operating flouring mills, planing mills, box factories machine shops, etc., and endless supply of water power within easy reach. The finest country in the world for air seasoning and wood manufacturing.

The Columbia River Scenery and Eastern Oregon Climate is Unequaled in the World

For Further Information Address THE DALLES BUSINESS MEN'S ASSOCIATION

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DON'T MAKE THE MISTAKE OTHERS HAVE MADE

And purchase fruit lands before you look up the opportunities offered at Dufur where farms are being cut up into ten and twenty acre tracts for fruit raising. Dufur is only fifteen miles south of The Dalles and twenty miles southwest of Hood River Valley

Hundreds of trees are being set out every year; don't miss the opportunity of getting in on the ground floor where we have the best lands for the least money

No other country attempts to offer as good fruit lands, all cleared and ready to set out to trees, as is offered in Dufur

For further information write

THE DUFUR COMMERCIAL CLUB

FRUIT LANDS

We have for sale some very fine tracts of improved and unimproved fruit lands in Wasco County, Oregon, the center of the most famous apple, cherry and peach belt of the world. ¶ Our apples bring the highest prices on of any the market. Our cherries, apricots and peaches beat the world. ¶ We have just the place that will suit you, regardless of what your wants may be. We offer the best bargains, the best lands and the best terms. ¶ Write us what you want and we will quote you prices and terms. We have it.

T. C. HANFORD & CO.

219 SECOND STREET THE DALLES, OREGON

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A LIVE WIRE implies connection with a power house. A POWER HOUSE shelters the dynamo. THE DYNAMO rearranges nature's forces for man's purposes. *The live wire conveys the power to the purchaser.* The PRODUCE REPORTER CO. furnishes "power" for shippers of fruit and produce. The shipper that fails to connect with this organization is like a mechanic running a jig saw with his foot. Be live, up-to-date—avail yourselves of the present-day system of credits and market your output safely and at best prices. *Do your own selling to distant markets*

SEND FOR BOOKLET, FREE

PRODUCE REPORTER CO.

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Yamhill County

OREGON

Has Been Officially Recognized as the Champion Cherry Growing Section of the World

ROSE OF PERU

Grown by M. O. Lowensdale, LaFayette, Oregon

IN the near future Yamhill County will be as prominent in grape culture as she has been for many years in apple growing and is now in the production of cherries. Evidence of her resources will be supplied upon application to

THE YAMHILL COUNTY DEVELOPMENT LEAGUE, *McMinnville, Oregon*